



ANNUAL REPORT
UPON THE
HEALTHINESS OF THE
CITIZENS,
AND UPON THE
SANITARY CONDITION
OF THE
CITY AND COUNTY
OF
NORWICH
FOR THE YEAR
1910.

BY

H. C. PATTIN, D.M., M.A., B.C. (Cantab), D.P.H.

PHYSICIAN TO THE CORPORATION HOSPITALS,
EX-PRESIDENT OF THE SOCIETY OF MEDICAL OFFICERS OF HEALTH,
FELLOW OF THE ROYAL SOCIETY OF MEDICINE (EPIDEMIOLOGICAL
SECTION), AND OF THE ROYAL STATISTICAL SOCIETY,
MAJOR S.S., R.A.M.C. (T.),
ADMINISTRATIVE SCHOOL MEDICAL OFFICER,
MEDICAL OFFICER OF HEALTH.

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CITY OF NORWICH.

HEALTH COMMITTEE.

The Lord Mayor :

EUSTACE GURNEY, ESQ.

Chairman :

MR. ALDERMAN MORSE, J.P.

Vice-Chairman :

MR. COUNCILLOR CROTCH, J.P.

Members :

MR. ALDERMAN SHORTEN	MR. COUN. PYKE
MR. COUN. BASSINGTHWAIGHTE	„ „ ROBINSON, J.P.
„ „ DARRELL, M.D.	„ „ RUDD
„ „ LEMON	„ „ L. J. TILLET
„ „ ODHAMS, M.D., J.P.	„ „ WITARD

PREFACE.



TO THE CHAIRMAN AND MEMBERS OF THE NORWICH
URBAN SANITARY AUTHORITY.

GENTLEMEN,

By a General Order of the Local Government Board, dated 23rd March, 1891, it is prescribed that every Medical Officer of Health shall:—

Make an Annual Report to the Sanitary Authority up to the end of December in each year, comprising a summary of the action taken, or which he has advised the Sanitary Authority to take, during the year for preventing the spread of disease, and an account of the sanitary state of his district generally at the end of the year.

“The Report shall also contain an account of the enquiries which he has made as to the conditions injurious to health existing in the district, and of the proceedings in which he has taken part, or advised under any statute, so far as such proceedings relate to these conditions.

“Also an account of the supervision exercised by him, or on his advice, for sanitary purposes over places and houses that the Sanitary Authority have power to regulate, with the nature and results of any proceedings which may have been so required and taken in respect of the same during the year.

“The Report shall also record the action taken by him, or on his advice, during the year in regard to offensive trades, to dairies, cow-sheds, and milk-shops, and to factories and workshops.

"The Report shall also contain tabular statements of the sickness and mortality within the district, classified according to diseases and localities." etc., etc.

The *birth-rate* for the year, 22·8 per 1000 of the population at all ages, is the lowest recorded, as is the average birth-rate in the 77 great towns, which is 24·9 per 1000 of the populations at all ages. The fall in our own case is 1·4 per 1000, and in the great towns, taken together, 0·8 or just half. This steady (in our own case an accelerated fall) decline in the birth-rate has more than local significance. It is of national importance, and is a source of disquietude to those who like to think that the moulding of certain prospective developments, and more particularly of ethico political tendencies, in that continuous process of adaptation to continuously altering surroundings which we imagine we apprehend by calling it "civilization" should be the privilege and prerogative of the British race. The immediate practical effect of a declining birth-rate, unless it be accompanied by an increased saving of life in those born, must be relatively to diminish our population, and the importance of our place. In our own City, as will be shewn later, such increased salvation of infant life has taken place. Of the infants born there were eight more of males than of females—a proportion much below the usual average; in 1909, for instance, the male majority was 92. 135 of the children born were known to be illegitimate (in 1909 there were 156), and the mortality rate for these unfortunate infants was just double that of those born in legitimate wedlock, the special death-rate amongst the illegitimate being 185 per 1000 births, whereas the corresponding rate amongst the legitimate was only 98. In other words, the chances of surviving one year for the illegitimate infants are only half as good as those of their legitimate compeers. There is here, and unquestionably, a discreditable, and one cannot help thinking a largely preventible, leakage of life—a leakage that would attain to even greater volume were it not for the efforts made by the Health Visitors, and by some voluntary workers who make the care and oversight of

illegitimate children their meed of social service, to staunch and check the loss. Against what adverse influences they have to contend the figures bear only too convincing testimony.

The *gross recorded death-rate* 12·8 per 1000 of the population at all ages (the deaths of non-residents are included) is lower than the average for the 77 great towns, which is 13·4 per 1000; and is the lowest we have yet recorded. The decline as compared with 1909 in our own City and in the 77 great towns is the same, viz., 1·2 per 1000, and represents a saving in Norwich of 150 lives.

The *corrected death-rate* (see section of Report headed "Demographical Statistics") was 12·2 per 1000; and the *comparative mortality figure* was 877 taking 1000 as that for England and Wales as a whole. The average gross death-rate of the City for the preceding five years has been 15·2 per 1000.

The *zymotic death-rate* 0·68 per 1000 is also the lowest I have had the pleasure to record. It is about half that of the 77 great towns taken collectively, which is 1·2 per 1000. In 1909 the corresponding rates were 1·5 and 1·4 per 1000.

The *infantile mortality rate*, 103 per 1000 births, is another satisfactory one, and again the lowest on record. The corresponding rate for the 77 great towns is 115 per 1000 births—the balance in our favour being no less than 12 per 1000. In 1909 the corresponding rates were 119·0 and 120·25 respectively; so that whilst the average in the great towns has fallen 5·25 per 1000 our fall has been no less than 16 per 1000 births, or three times as great. As was the case in 1909, a relatively cool summer undoubtedly has contributed to this lessening of the infantile mortality rate, but the most important contributories, in my judgment, have been the supervision which has resulted from visitation of the homes by the Health Visitors and the sustained help given to badly-nourished mothers of newly-born infants by the Sick Poor Society on my recommendation. It is not possible

for me to speak in adequate terms of the generosity shewn by this Society nor to affirm too strongly that the results have been of the greatest value in saving infant life in our City. This public-spirited service is all the more deserving of recognition because I know that the Society has strained its resources to supply milk to the mothers, never less than one pint a day, and usually for periods ranging from two to five weeks. Nor is the aid it furnishes limited to cases recommended from my office. Its visitors constantly give aid to badly-nourished mothers whose needs come independently of the Public Health Department to their notice. During the year 536 newly-confined, badly-nourished mothers were recommended by me to the Society, and no less than 523, or 98 per cent. of them, received help. The Sick Poor Society is prevented by the terms of its constitution from giving milk to under-nourished expectant mothers, so to tide these over a trying period I have asked the Charity Organization Society to try and get some nourishment provided for them. Usually, when the C.O.S. is able to procure this, it has taken the form of dinners. Out of 22 cases (several of which for various, and to it, valid reasons the C.O.S. could not see its way to help) 12 or 54·5 per cent. were so helped. This sort of help, *i.e.*, the provision of food, is of the greatest value to badly-nourished expectant mothers, and I should like to find the possibility of securing it increased and the means for furnishing it systematized and extended. It must be remembered that aid so given benefits not only the immediate recipient, but also the prospective citizen, and incidentally the State. A difficulty in connection with affording help, both before and after childbirth, to badly-nourished mothers, which, owing to their constitution, organized societies cannot meet, arises in the case of the unmarried. From a casual and insecure private source I have, from time to time, furnished through the Health Visitors, some slender aid to these; and without entering upon the ethical question whether or not it is our duty to visit the sins of the fathers (and of the mothers) upon these children in the first without waiting for the third and fourth generation, if any reader

like to send me a donation for use in connection with these cases I can promise that, with the aid of Mrs. Whitty, it shall be prudently, judiciously, and generously bestowed. I have lived in Norwich now for half a generation and its people must have determined in their own minds whether or not I am to be trusted. No public mention will be made either of donor or recipient.

As I pointed out last year the inference which should be drawn from the effect of a relatively cold summer—in checking degenerative and putrefactive changes in milk—is the advantage to be derived from keeping milk, and particularly milk intended for the food of infants, at a low temperature. If such milk be kept in a *clean* bottle, corked or stoppered, or other suitable vessel, and that bottle or can be kept immersed in cold water (or ice), contact with flies can be prevented, dust excluded and detrimental changes checked or stayed altogether. Whilst, as compared with our past record, an infantile mortality rate of 103 per 1000 births is very encouraging, I must point out that even this rate is a discomfortous item in our budget of lethalties. It means that rather more than one child in every ten born fails to survive one year. All the factors which contribute to this loss cannot properly be set out here; but the more obvious attain to a “bad eminence” in the special table devoted to infant mortality page 31. I invite particular attention to the ravages of “premature birth,” “debility,” and “congenital defects,” because these suggest conditions unfavourable to the child, affecting unfavourably through the mother, its nutrition and viability *prior* to birth. Infant mortality can neither be dissociated from *ante-natal* influences nor properly be regarded as due solely to *post-natal* causes. In the endeavour rightly to appreciate the causes and antecedents of death we shall learn to realize with what profound sagacity Burke defined a community, viz., as “*a partnership not only between those who are living, but between those who are dead and those who are to be born.*”

The *Notification of Births Act* has now been in force in this City for three years, and through its operation I received last year

direct notification of two-thirds of the births that took place in the City. For the main purpose, for which as a practical administrator I recommended the adoption of the Act, I am well satisfied with its working in Norwich, viz., for giving the Public Health Department early information of births at which no medical practitioner is in attendance. I do not bother myself much over non-notification of a birth when a doctor is present at it. I learn of its occurrence later on when the returns are sent in by the registrars, and I have much fellow feeling for the members of the medical profession who were, in my opinion, treated with even more than the usual shabbiness, which characterises parliamentary dealing with doctors, when the statute was passed, and no fee was apportioned for notification. Were such fee awarded for the service I should feel justified in advising the authority to prosecute non-notifiers.

The Act has been, is, and will continue to be of the greatest value in so far as it secures for us early information of births where no doctor is called in; as the call, made by the Health Visitor (who, is always a certificated midwife) at the dwelling enables us to give advice as to the feeding and care of the newly-born infants, etc., promptly. It is from these visits that I obtain knowledge of badly-nourished mothers, and am enabled to recommend them to the Sick Poor Society. The Matron of the Maternity Charity often also calls attention to these when sending in the notification of cases attended from that Institution. To avoid any ill effect of the delay which must occur between the postage of the recommendation to the S.P.S. Visitor and the supply of the milk, the Health Visitors are authorised to, and do supply it temporarily, and by these means, in any case of urgency, delay is avoided. Moreover the call of the Health Visitor personifies the interest which our community as a whole, our civic family, takes in the welfare of these youngest and most helpless of its members, and, tempered with tact, this interest becomes of real assistance to well-meaning parents, and a reproof and restraint to the indifferent and the careless. It is by means of these visits,

aided by a constant, if but very gradual heightening of the general level of communal intelligence that we must look to procure alteration in some unsatisfactory elements in the racial attitude toward the obligations of parenthood, and to substitute alike for well-intentioned ignorance, and an ethically demoralizing disinclination to take trouble—a civic consciousness that rightly to rear a healthy citizen is a racial duty, the effective discharge of which is one of the most patriotic services that can be rendered to the State. I find the number of doctors who notify births to me, in preference to reminding the parent to notify, increase, and attribute the fact to the circumstances that they find the early call of the Health Visitor helpful in getting the home looked after, and their patients benefited indirectly. I am pretty confident that as time goes on, and a younger generation of doctors comes along, this practice will be increasingly adopted; and am by no means without hope that Parliament will some day be animated by a sufficiently wise spirit of economy to apportion a fee for the notification and so be entitled to claim it from all practitioners.

During the year the Health Visitors, who also act as School Nurses, paid 13,218 visits and re-visits to houses (3766 arising out of medical inspectorial work in the schools), and found in these 748 sick persons at all ages. 76 houses and 469 persons were at their suggestion more or less effectively cleaned, 15 of the latter (school children) compulsorily. They found 185 of the householders out of work, and 478 only working irregularly. To 1856 infants born during the year they paid 4830 visits. At the time of the visit 1691 of these infants were being fed from the breast, 18 with breast and bottle, 38 breast and spoon fed, 30 fed from bottles with *long tubes*, 73 from bottles with short teats, 6 fed by spoon alone. 252 of the infants were found to be ailing. 1142 of the mothers were “healthy,” 171 “healthy, but not strong,” 41 “very delicate,” and 522 “badly nourished.” 41 of the mothers went out to work and 20 took in work at home. 86 infants were fed with “Glaxo” (dried milk), these infants being brought to my office once a fortnight to be weighed. In a majority of the cases

this form of feeding was of real benefit, and in some of very marked benefit. In 106 cases the Health Visitors got bad methods of feeding given up and better ones adopted. 59 still-births were notified during the year and 27 sets of twins. Of the dwellings visited those with one bedroom only (13·17 per cent.) contained an average population of 4 persons; those with 2 bedrooms (44·10 per cent.) 2·75 persons per room; those with 3 bedrooms (40·80 per cent.) 2·0 persons per room; and those with 4 bedrooms (1·97 per cent.), also 2·0 persons per room. The average population, *per house*, taking the city as a whole, is estimated at 4·4 persons. 70 cleansing notices to cleanse children were sent out in accordance with the provisions of the Children's Act, the greater number of which were complied with by the parents more or less willingly, but in 15 instances it was necessary compulsorily to remove the children and to carry out the cleansing at the Union. The Health Visitors call at all the schools in their districts not less often than once a fortnight and examine any child deemed to be dirty or verminous and issue subsequently the requisite notice to the parents. This work will effect a gradual improvement in the relative cleanliness of the children of the neglectful or careless, and cannot fail beneficially to react upon the condition of the homes—which thus come under review.

The Local Government Board requests that the M.O.H. will state, each year, in this Annual Report what arrangements have been made to carry out the medical inspection of school children, and to furnish a summary of the work done and of its results. The arrangements made in this City remain as detailed previously, viz., the M.O.H. is the principal and administrative School Medical Officer, and is the S.M.O. recognised by the Board of Education—whilst the actual inspectorial work is done by Dr. Mathieson with a little assistance from Dr. Linton. The following is a summary of the work done and of the results obtained in 1910. The total number of children examined at routine inspections at the schools was 4032, made up of Entrants 2229

(boys 1128, girls 1101), and 1083 Leavers (887 boys and 916 girls). The principal defects found were—Naso-pharyngeal obstruction (enlarged tonsils, adenoids, etc.) (a) sufficiently marked seriously to affect health, or to interfere with growth, 3·6 per cent., (b) of a minor degree 10·9 per cent., diseases of the eye (inclusive of marked visual defect) 5·0 per cent., diseases of the ear and deafness 1·5 per cent., diseases of the chest 0·6 per cent.; various other defects 3·6 per cent., *making a total of 14·4 per cent. (584) for which medical attention was considered necessary and was advised.* The parents in each of these cases received a notification of the desirability of securing medical attention with the least possible delay, and the homes have been repeatedly visited by the Health Visitors to learn what has been done. As a result of these enquiries we learn that about 69 per cent. of the children found to need medical aid have received it. The parents are always invited to be present at the actual inspections, and when present their attention is at once called to any defect; and one or other of the parents was present at the inspection 69·7 of the children. 129 children were specially examined to determine their fitness for admission to the Open-Air School, and of these 78 were selected and sent to it—42 boys and 36 girls—and whilst at the School these children were from time to time examined, weighed and measured, and the results tabulated.

873 children sent up by the Attendance-Officers were examined at the Municipal Offices, and their fitness to attend school determined; at the request of the head teachers, 601 children were examined for special reasons either at the schools or the Municipal Offices; 4 children were certified as being suitable for admission to special institutions; 69 children were examined with special reference to their mental condition, and 18 were found and certified to be “mentally defective” and selected for the Quayside Special School. 38 candidates for pupil teacherships were examined in accordance with the requirements of the Board of Education; in 9 cases certificates were withheld on account of the unsatisfactory condition of the teeth. In all the cases adequate treatment was obtained, and the certificates were then granted.

During the last seven weeks of the year a Dental Institution for the treatment of the teeth of school children was opened by the Authority at 60, Chapel Field Road, and 333 children's teeth received treatment. This institution is working very satisfactorily, and is doing valuable service to the community, Mr. L. K. Percy, L.D.S., the dentist, being not only a thoroughly competent officer, but also one much liked by the children. He examines the children in the schools and treats them at the institution later.

Inspection of children gathered for one purpose, viz., education, in the schools, has been very successfully utilized for another, viz., testing and incidentally standardizing the national healthiness at the school-going age, at any rate among the attendants at our elementary schools; with results that have already fully warranted the experiment and lead one to hope that this beginning will prove to be but the starting point of a rationalized system of medical inspection of the whole growing population from infancy to adolescence. It is certainly a glaring anomaly medically to inspect children *only after the commencement of school life, and to make no provision for their inspection during the vitally important years, which intervene between their birth and the commencement of their education*—using that much abused word with the conventional meaning. *The inspection of every child at least once a year from infancy to adolescence is the goal to look forward to.* Its enforcement should certainly provide us with an efficient means of correcting and minimizing, if it be not possible to eradicate, defects and disabilities. It is preventive work of the most practical type, and should prove of inestimable value to us as a people.

From an epidemiological standpoint the principal characteristic of the year under review has been the persistence of Scarlet Fever in considerable amount; occasionally, and in limited areas, the disease became epidemic. The great difficulty we have in controlling this disease arises from two causes—(a) doubt as to real originating cause, and (b) the extreme mildness of the disease in a great number of the cases. A fairly severe attack of Scarlet



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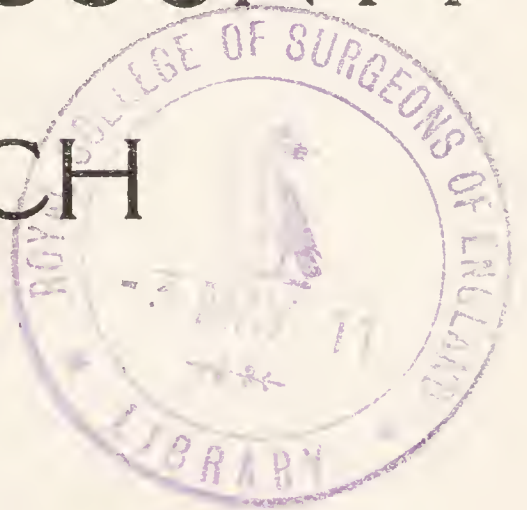
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Fever is one of the easiest of ailments to diagnose, but a mild aberrant Scarlet Fever is just as difficult; over and over again we were able to trace cases to what is known as a "missed" case, *i.e.*, a case of so mild a type that the disease is not recognised at the time of its onset, and only is found out when a careful scrutiny has been set on foot to discover why other members of the household develop the disease. For example, a boy (who, by the way, it was affirmed had had Scarlet Fever three years before) was taken slightly ill with what was thought to be a cold, and at the end of a week was certified by a doctor to be fit again to go to school. No rash and no high temperature characterized the case—at any rate neither was ever noticed. In about a week's time after the return of that boy cases of Scarlet Fever began to be notified from the school, and on enquiry it was found that they all came from one class. Dr. Linton, at my request, made a careful examination of all the boys in that class, found evidence of very slight peeling in the hand of one boy, the missed case referred to, excluded him, and no other case occurred. Similarly, in a workshop, a young fellow contracted Scarlet Fever of so mild a type that his doctor affirmed that it was an influenzal cold, and signed a certificate for him to go back to work. After a time cases began to dribble in from his colleagues in the workshop; a careful inspection was made of the workers at the said workshop, the original "missed" case found, removed to the Isolation Hospital, and no other cases occurred there. Multiply that sort of infection so mild as to deceive parents, school teachers, fellow workers, and even doctors, and it is easily to be realized that mild Scarlets are as much a bugbear to the Public Health Department as are the mild nasal Diphtherias, which also are constantly overlooked and spread abroad that disease.

The amount of Diphtheria coming to our notice was slightly less than in the previous year. A good deal of it was of a mild type, and in two schools in particular quite considerable outbreaks proved on enquiry to originate in mild overlooked cases of nasal Diphtheria, the discharge from the nose having been attributed to a common cold. Unfortunately the nasal type of Diphtheria gives

rise to more dangerous forms of the disease in others—*e.g.*, to faucial and laryngeal—the latter being specially dangerous. By taking swabs of suspicious noses and throats and making “cultivations” from the swabs so obtained, and subjecting these to microscopical examination, bacteriological evidence of the presence or absence of the true disease (there are aberrant and bastard forms) is obtained. This procedure is most helpful in dealing with “contacts,” *e.g.*, it often happens that a member of a family contracts Diphtheria, and the question then immediately crops up of the safety of permitting other members of the family to continue their avocations. Determination of this is effected by bacteriological examination of cultures obtained after swabbing, and certificates can be given of freedom from infection. Diphtheria appears to need fairly close association to be transmitted from person to person. Of course, if a victim of Diphtheria coughs bacilli on to the clothing, etc., of others or wipes discharges upon handkerchiefs, towels, etc., used by others the possibilities of spreading the disease are greatly heightened; as they are if cups, spoons, etc., used by the victim are not carefully sterilized in boiling water before being used by another. But with intelligent precautions, until removal to the Isolation Hospital is effected, a case of Diphtheria, if recognised reasonably early, ought not to, and rarely does, give rise to others even in the same household. The use of Anti-Toxin not only to the patient, but also as a protective to those coming into contact with him, is an additional, and, in all doubtful cases, a very effective safeguard. Anti-Toxin is supplied gratuitously for immediate use to a patient to any doctor applying for it, and the prompt employment of this remedy, together with such measures as those indicated, ought to make Diphtheria a controllable disease. But to be efficacious these measures must be adopted promptly, and prompt information is still sadly to be sought in far too many of the cases coming to our notice.

There was a reduction of one-fifth in the amount of Enteric Fever notified (36 as compared with 45) during the year contrasted

with that of the previous year, and by no means all of the cases so notified proved to be true Enteric—some were Para-typhoid, a bastard sort of Enteric, very suitable for isolation, and properly cases to be treated in Hospital. In quite a considerable proportion of all the cases notified the source of the disease, so far as this could be obtained, was shell-fish; for the protection of the community from which possible source of danger we are still left without the Legislative enactments which past experience, including our own in 1908, has shewn to be needful. In this matter “the constitutional crisis” affects only the individual, though indubitably it may be, and usually is, of the gravest character. Our Parliament, broadly speaking, still remains extraordinarily indifferent to the fact that “the individual withers.”

Measles prevailed extensively in 1909, and toward the end of 1910 Whooping Cough swooped down upon some of the infant schools “like a wolf on the fold.” In dealing with this devastating disease I am following the practice I adopted, and successfully, with Measles in 1908, viz., if a member of a family *already have had the disease*, I do not exclude him or her from the schools because another member of the family is the victim of it; but I do exclude all members of a family of school age who have not had the disease if a case occur in any household. Whooping Cough, like Measles, in my judgment, spreads little by clothing, etc., unless the patient who has the disease, in coughing projects upon clothing, etc., infective material. Were our accommodation more extensive, I should very much like to remove cases of Whooping Cough from homes unsuited for their adequate treatment and take them to the Isolation Hospital; the ravages of the disease are directly so deadly and indirectly so dangerous. It is a frightfully weakening disease to begin with, and paves the way for Consumption and other deadly possible followers-on in only too many cases. Last year (1910) our zymotic death date was the lowest recorded. Already in the current first quarter of 1911 the deaths from Whooping Cough have made all prospect of repeating such a rate discouragingly remote. We can only do our best to bear up

against the inevitable disasters of a campaign for which we are so badly accoutred, and can only proffer a weak defence, and such aid—and, in truth, very valuable aid in many cases—as can be and is afforded by advice and help from our Health Visitors. Dealing with these ailments, practically all of which arise, for epidemiological purposes, *in the infants' schools*, leads me once more to express a fervent hope that our “great, wise, and eminent” will one day raise the age of admission to the schools for the ordinary purposes of “education,” as conventionally interpreted, to six years. Apart from all other considerations, and there are many to be taken into account, the fact that the later in life a child contracts an infectious disease, the less fatal it usually is, should give us pause in our, to my thinking, unphilosophical and altogether deplorable haste to hustle children into schools. It is not so much facilities for injudicious and physiological harmful development of memory at cost of mind, with the concomitant lethality and constitutional damages from infectious diseases which result from aggregation of young children in infant schools, but improvement of the homes, which ought to be the goal of national as contradistinguished from pedantic educationalists. Average children under six should be admitted only to *bonâ fide play schools*, so arranged that not more than a score at any one time could be aggregated together with, in the matter of light and air, the nearest approximation that can be made to “open air.”

The average number of patients in the Isolation Hospital on Saturday nights throughout the year was 88·5. The average number of the nursing staff (exclusive of the matron and the “home sister”) was 24·5, and the average number of the domestic staff 15. The average stay of patients was 40 days. The new observation pavilion, consisting of glass-sided rooms, each separate from the others, was brought into use toward the end of 1909, and proved of the greatest service throughout 1910, *e.g.*, it enabled us to treat Enteric cases as there were but comparatively few without opening a special pavilion, and to utilize the Enteric ward for convalescents. The efficacy of this

method of dealing with cases of mixed, and doubtful, and of simple but exceptionally severe infection has been most pronounced, and has confirmed me in my repeatedly expressed belief that the right method of treating infectious cases is to place each patient in a separate glass-sided cubicle, the occupants being able to see and converse with others, but not coming into actual contact. Large wards used for the treatment of one disease only, in my judgment, should be divided up into these glass-sided compartments, the sides of which would not need to be more than 7 ft. in height. It is not possible to mix together patients suffering from the same disease, but at differing stages and with differing degrees of intensity, without running risk of secondary exacerbations, complications, and re-infections, which mean lengthened stay in Hospital and a more lingering and potentially infective convalescence. Real isolation, the right method of treating infectious diseases, would thus be practicable in fever hospitals. The small destructor continues to render valuable service in enabling us safely and promptly to dispose of infective discharges, dressings, and ward debris. Some existing buildings have been adapted for use as a stable, and with the horse on the premises there is a good prospect of saving time in sending for patients.

The L.G.B. asks the M.O.H. to give "definite general" information respecting the "methods of control of Tuberculosis" in his district, number of cases notified, "action taken in respect of known cases and deaths," and amount of hospital accommodation "for advanced and for earlier cases of disease," etc., etc. In this picturesque and very ancient City (and county of the same) the methods of control remain virtually restricted to the giving of sage counsel to the community, and sympathetic advice to the sufferers; to the remedying, where practicable, of unfavourable conditions in the home or workplace, and to disinfection of the room occupied by the victim when Pale Death have made the call which sooner or later will be paid to us all. The Health Authority proffers and pays fees for the voluntary notification of cases of Phthisis (Tuberculosis of the Lungs), hoping that by

these means it will hear earlier of it; will not have to wait until the Fates have snipped the thread of Life with the "abhorred shears" before we are informed of the existence of the disease. Poor Law Medical Officers are required compulsorily to notify cases of Phthisis coming to their notice. From this latter source I received notification of 67 cases of Phthisis, and from voluntary notifications I learned of the existence of 60 others, or, 127 primary notifications. Actually 170 notifications were received, but the difference is due to re-duplication of the notifications of a single case. In 92 of these 127 cases we were able to obtain information as to home surroundings, etc. In 35 cases either the patient had no home or information was refused. This, summarized, is as follows:—59·78 per cent. of the patients were males, and 40·22 per cent. females. 9·79 per cent. of the houses, with an average population of 2·8 persons, possessed only one bedroom; 33·69 per cent. of the houses, with an average population per house of 5·8 persons, possessed 2 bedrooms; 44·56 per cent. of the houses, with an average population per house of 5·4 persons, had 3 bedrooms; and 11·96 per cent. of the houses, with an average population of 6·4 persons, had 4 or more bedrooms. In 14·13 per cent. of the houses gave evidence of dampness. In 26·08 per cent. of the houses *a bedroom was shared by the patient with others*. 4·34 per cent. of the patients had received treatment in a sanatorium. In 26·08 per cent. of the cases there was evidence of family taint. 3·26 per cent. of the patients were under 15 years of age; 36·96 per cent. between 15 and 25 years of age; 33·70 per cent. between 25 and 40 years of age; and 26·08 per cent. 40 years of age and upwards. The occupations of the patients, and, where these followed no occupation, of the householders, were 1 Apprentice Electric Light Co., 31 Boot Workers, 2 Bakers, 1 Beer Bottler, 1 Box Maker, 1 Bottle Washer, 1 Brush Maker, 1 Card Cutter, 1 Charwoman, 1 Clothing Agent, 1 Clerk, 1 Compositor, 2 Domestics, 1 Errand Boy, 1 Fur Cutter, 1 Fish Hawker, 1 Grocer's Assistant, 3 Hairdressers, 13 Housewives, 1 Iron Moulder, 11 Labourers, 1 Milliner, 1 Painter, 2 Packers, 1 Soldier, 1 Tailoress, 1 Weighman, 5 no occupation. Of 3

school children, the fathers were a boot worker and 2 labourers. The cases notified were, in the main, past the stage when sanatorium treatment would be of permanent benefit. A number of the Poor Law cases go for varying periods into the Union Infirmary, and as soon as they get patched up a bit, come out again only to break down and get re-admitted. These cases are notified several times over. (I have counted them once only). In all instances, when we learn of a case of Tuberculosis, a call is made at the home by the Health Visitor, who explains and leaves a card of instructions, and makes a report upon the general character of the dwelling, the number of the bedrooms, and of the occupants, relative dampness or dryness, amount of light and sunlight, ventilation, etc., and the Health Department does its best to get defects remedied, and gives advice as tactfully as possible to the inhabitants. When death takes place, an offer is always made gratuitously to disinfect the room used by the patient, and almost invariably is accepted, usually gratefully. Last year 133 deaths (two more than in 1909) were certified to be due to tuberculous disease of the lungs (Phthisis).

Of the deaths from Phthisis registered in 1910, 4 took place in the Norfolk and Norwich Hospital and 20 in the Union Infirmary; in 1909 the corresponding figures were 3 and 16. It is, I think, an estimate, which falls below the actual facts, which assumes that, for every fatal case of Phthisis, there are not less than three others definitely suffering with the disease. Upon this basis, at any given moment, one assumes, therefore, that there are in this City over 500 cases of Phthisis—one-fourth of whom, it is fair to assume, would be suitable for treatment in a sanatorium, with reasonable prospect of cure, if admitted at a sufficiently early stage; one-half might derive benefit from it and be patched up for a time more or less effectively; and one-fourth would derive no real advantage from it; are, in fact, to all intents and for all purposes, so advanced as to be hopeless. A small proportion only of even that fourth which most hopefully may be treated in a sanatorium at present obtains treatment at Kelling from their own

resources, and by the help of friends, or in some instances of societies. On an adequate scale, sanatorium treatment will only be available for workers who depend for their livelihood upon their own exertions when a national system of insurance against invalidity is established. It will be remembered that I have repeatedly suggested that the Health Authority obtain and retain a number of beds at Kelling for the treatment of early and specially selected cases of Phthisis, when the disease occur among people who cannot provide treatment for themselves, but who, if no steps be taken to counteract the disease, sooner or later will fall upon the rates and possibly their families as well. I estimate that for a farthing rate half-a-dozen beds could be so retained for a year, and furnish thus to two dozen of our fellows three months' treatment each at Kelling. Meantime another and very helpful type of treatment is being established and carried on which has the great advantage of not taking the patient away from his work. This is what is known as "The Tuberculin Dispensary"—a phthisical workman, say, calls at this on his way to work, or at some convenient interval, and is injected with "Tuberculin" in varying amount. It is claimed for this treatment that beneficial results can be obtained in a considerable number of cases. Were our rates lower, I should ask the Health Authority to obtain a farthing rate and devote it to this purpose. The Corporation of Portsmouth is just establishing such a Tuberculin Dispensary, and I shall watch its work with a lively interest; and if the results justify it, I shall certainly bring the claims of this type of treatment prominently to the notice of the Health Authority and the public of this City. Any fighting chance against such an economically wasteful a disease as is tuberculosis ought to be seized upon by the community. So far as I can learn, at present, the systematized tuberculin treatment seems likely to prove a real economy and to be productive in certain cases of marked, and, what is more important, of lasting benefit. The Union Infirmary admits phthisical patients in no fixed ratio. On the first of January, 1910, there were 16 phthisical inmates. Between the 1st of January and the 31st of December, 1910, 44 persons were admitted, 4 of them twice, 1 three times, and 1 four

times. There were 20 deaths registered, or roughly 33 per cent. of the total number admitted. There still prevails, I find, a considerable prejudice against going into the Union for treatment amongst our consumptives, and it is usually resorted to only when no other haven is proffered wherein to await the Beckoning Finger. The Norfolk and Norwich Hospital sets aside six beds for the treatment of the phthisical, and if we assume that these are divided equally between the County of the City and the County of Norfolk, that distribution gives three to the City.

During the year *Ophthalmia Neonatorum* (Inflammation (due to specific cause) of the eyes of the newly born) has been added to our list of notifiable diseases; 10 notifications were received. In the past a great amount of preventable blindness, estimated by competent observers at one-half, has been due to neglect of this disease in its early stages. The advantage of having it notified consists in the steps which are taken in the Public Health Department to see that treatment for the disease is not neglected. A Health Visitor calls, and aids, and advises the relatives, and does her best to see that the treatment recommended is effectively applied. I anticipate nothing but benefit from the notification of this disease.

There were slight increases in the mortality from Heart diseases, Scarlet Fever, Enteric Fever, Whooping Cough, and Influenza; and slight decreases in the mortality from Respiratory diseases, Erysipelas, Measles, Diarrhœal diseases, Alcoholism, and Venereal diseases. The mortality rates for Diphtheria and the Tuberculous diseases were the same; but that does not mean that they were actually stationary, seeing that the population is estimated to increase at 1 per cent. per annum. A repetition in 1910 of the figures reached in 1909 signifies a fractional improvement in the former.

During the year 922 certificates were given to school children and workers in factory or workshop (in respect of infectious diseases in themselves or in their dwellings, or of freedom from

it) certifying to their fitness to resume attendance at school or employment. Dr. Linton made 1,569 bacteriological examinations cultures from swabs, and 48 widal tests of the blood of suspected or doubtful Typhoids in the laboratory at the Isolation Hospital. This laboratory, whilst well suited for the hospital work, is both too small and too remote successfully to cope with the amount of bacteriological work which is likely to be needed if my department is to be conducted with the greatest efficiency. I have again, in connection with preventive work in limiting the propagation of infectious disease, to reiterate the opinion I have repeatedly expressed, that it is most desirable that *Sunday* Schools be subjected to the same regulations as to air and floor space per scholar as prevail in our public elementary week-day schools.

The Housing and Town Planning Act, 1909, increases the power of the Health Authority to deal directly with dwellings deemed by it to be unfit for human habitation; but still leaves the standard practically to local determination in each locality, subject to an appeal to the L.G.B. In this city, the chief source of trouble in dealing with old property is likely to prove the absence of a damp-proof course in the walls and of a layer of concrete beneath the floors. Without these a dwelling is always liable to be or to become damp. Other defects such as overcrowding, imperfect ventilation, and insufficient lighting are commonly not difficult to remedy; but, to render an old house, built without "damp" course, and concrete beneath the floors, damp and rat proof, one remedy only, so far as I can see—that of requiring the insertion of a damp-proof course and a layer of concrete—will effect a permanent cure. The Health Authority will have to determine in each case whether or not the dampness calls for this remedy.

Midwives Act. There were 19 midwives on our register last year, eight of them for varying periods in the service of the Maternity Charity. I can report in general terms favourably of their work and conduct. None but registered women are now to

be permitted to act as midwives, and, with some suggested alteration, the administration of the Midwives Act will become more stringent. An unregistered person apparently can act as a midwife provided that she does specifically call herself one, and such a person does not appear to be amenable to control by law, except as the possible outcome of an inquest. I have utilized the Health Visitors (each of whom is a certified midwife) in making inquiries respecting still-births, &c., and in reporting upon the home surroundings, bedrooms, &c., of the practising midwives. Special stress is laid upon the importance of keeping the finger nails scrupulously clean and disinfecting the hands carefully, and generally upon care and cleanliness being exercised in handling and keeping instruments. Midwives are advised to wear washable dresses. No instance of culpable carelessness came to my notice.

Carrying out the Factory and Workshops Act, 574 inspections of factories and workshops were made and 62 defects reported and remedied—101 lists of out-workers were sent in (76 of them twice a year); 777 inspections of out-workers' (male and female) premises were made. In 96 instances out-work was being done in unwholesome premises (Section 108), the greater number of which were dealt with by verbal notices—in 3 instances only were formal notices required; in 43 instances infectious illness occurred in out-workers' dwellings (Sections 109-110), and in none of these was other than verbal directions required. The total number of registered workshops on register was 682, and there were 4 underground bakehouses (Section 101) in use at the end of the year. In 23 instances action was taken under the Public Health Acts in matters referred by H.M. Inspector of Factories.

Under the Food and Drugs Act 214 samples were purchased to be submitted to analysis, and 2 samples of water were also taken from the steadily diminishing number of wells. Of the foods, &c., (the full details are set out in the Chief Sanitary

Inspector's report) 178 samples were certified to be genuine in quality and 36 to be adulterated. In 21 of these cases prosecution of the vendors was undertaken, and in 20 the magistrates imposed fines ranging from 1/- to £5. In 3 cases the summonses were withdrawn, and in 1 instance the magistrates dismissed the case; 11 vendors were written to and cautioned. 20 of the samples of milk (113 in all) were taken on Sundays. A large proportion of the samples of milk contained more than the Board of Agriculture's standard amount of cream (3·0 per cent.), evidence in itself that the said standard is a very fair, and indeed a lenient one.

The Report of the Chief Sanitary Inspector gives a summary of the practical sanitary work carried out during the year, and states what has been done to maintain a sanitary condition in and to improve the general state of dairies, cowsheds, milk shops, common lodging-houses and slaughter-houses, &c. Mr. Brooks also records the change which has been effected in the character of the closet accommodation provided for dwellings, and for factories and workshops. The substitution of water closets for less satisfactory types is being effected with steady continuity, this change taking place last year in over 1,200 instances—the highest number reached. The Report of the Canal Boats Inspector has been of a satisfactory character.

I incorporate with this Report the statistical table shewing the number of tenements in the wards of the City *at the last Census*. I also include, a table of differentiated death rates for the City wards. These are only approximative, of course, but are the best we can arrive at so long as such an undesirable period (for all statistical purposes) as 10 years is allowed to intervene between each enumeration of the people. With a lessened interval between the taking of one Census and another all such estimates will become more accurate. The population of the City as a whole is assumed to have increased by about a tenth since the last Census, and it is to be remembered that parts of Catton and Sprowston have been incorporated.

Drs. Mathieson and Linton, Mr. Brooks and the Assistant Inspectors, the Health Visitors, the Staff at the Isolation Hospital, and indeed all the members of my department, continue to labour painfully and truly to promote what, "according to our lights," we deem to be the welfare of the City and the well-being of its people.

(Signed)

HARRY COOPER PATTIN.

March 17th, 1911.

METEOROLOGICAL NOTES.

(From observations taken by MR. A. W. PRESTON, F.R.Met.S., at
Norwich).

Barometer reduced to sea level and 32 deg. Fah., from 9 a.m. and 9 p.m. readings :—	Highest (Jan. 6th, Jan. 7th, March 31st) ...	30·56 ins.	1909. 30·68
	Lowest (Jan. 24th) ...	28·65 ins.	28·36
	Mean	29·856 ins.	29·99
Temperature—Maximum (May 20th) 80·0 degs. 83·2			
(Aug. 3rd)			
Minimum (Jan. 28th) { in screen 20·8 degs. 20·4			
,, ,, { on grass 10·8 ,, 15·8			
(Jan. 5th)			
Mean daily maximum 55·4 degs. 54·9			
Mean daily minimum 42·8 ,, 41·2			
Mean temperature of year ... 49·7 ,, 48·0			
Mean daily range 12·6 ,, 13·7			
Mean dry bulb (9 a.m.) ... 49·7 ,, 48·8			
Mean wet bulb (9 a.m.) ... 47·1 ,, 45·8			
Mean dew point (9 a.m.) ... 44·4 ,, 42·6			
Mean relative humidity (9 a.m.) 82% 80%			
No. of nights with { in screen ... 50 75			
frost { on grass ... 115 140			
Rainfall—Total fall 31·84 ins. 27·82			
Above average by 6·09 ins. 2·07			
Greatest fall in one day (Dec. 1st) 1·18 ins. ·78			
(July 27th)			
Number of days on which rain fell... 232 198			
Number of days on which snow fell 22 35			
Wind—Prevailing direction, w. Gales on 15 days.			

Summary of the Geology of Norwich.*

The geological construction of the soil underlying the City is simple in character. The higher levels are made up of glacial beds, through which the valleys have been excavated, exposing at their margins the crag formation and chalk, while gravel and alluvial deposits occupy the lower ground. The chalk, which at Norwich is nearly 1200 ft. thick, and underlies the whole of the City, comes to the surface in the Market Place, and in other places at a similar level; but it may be reached at no great depth in all parts of the Municipal area. The order of the succession of the glacial and crag beds is shown in excavations on the sides of the high ground surmounted by Mousehold Heath, between which Heath and the City proper winds the River Wensum. Except for some layers of peat in the valley, and a bed of brick-earth over part of the higher ground (as, for example, near the Victoria Station), the soil of the City is of a porous character, and much percolation of fluid takes place through the gravels, &c., into the chalk. The general trend of the drainage of the greater portion of the inhabited area of the City is toward the Wensum.

* Compiled from information contributed by Mr. F. W. Harmer, F.G.S.

DEMOGRAPHICAL STATISTICS.

<i>Enumerated Population at the Census of 1901</i> ...	(a) 111,733
Estimated Population in the middle of 1910 ...	(b) 125,446
Area in Statute Acres	7905
Density of Population (<i>i.e.</i> , number of persons per acre) [Rateable value, £464,196] ...	15.9
<i>Total number of Births registered in 1910</i> ...	2870
Representing a Birth-rate of	22.8 per 1000
Average Birth-rate of the 77 great towns being	24.9 per 1000
<i>Total number of Deaths registered in 1909</i> ...	1609
Representing a gross recorded Death-rate of ...	12.8 per 1000
* "Corrected Death-rate" for the year ...	12.2 „
† Average Death-rate in the 77 great towns ...	13.4 „
‡ Comparative Mortality Figure	877
Average Norwich Death-rate for the previous 5 years, 1905 to 1909 (inclusive) ...	15.2 per 1000
<i>Deaths from the seven principal Zymotic Diseases</i> ...	86
Representing a Zymotic Death-rate of ...	·68 per 1000
Average Zymotic Death-rate in 77 great towns being	1.2 „

* The "Corrected Death-rate" signifies the Death-rate which would obtain in Norwich if the local age and sex distribution were the same as those of the country generally.

† Estimated from the Registrar-General's Quarterly Reports.

‡ Taking 1000 as the mortality figure of the United Kingdom as a whole.

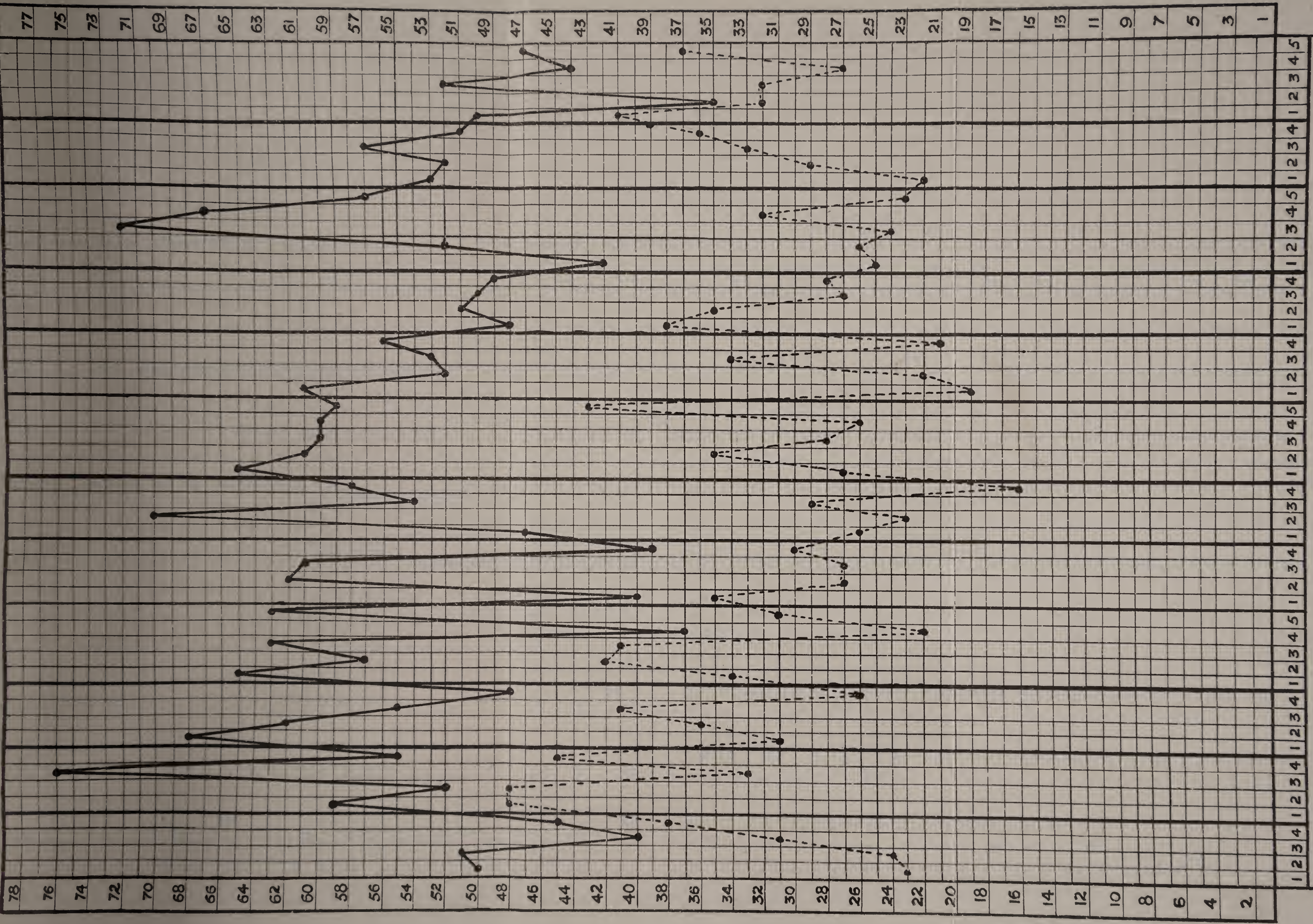
(a) Excluding population added in November, 1907.

(b) Including „ „ „ „

Gross recorded number of Deaths from all causes — Black Dashes.....
" " " Births — Black Line —

1910

1910



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INFANTILE MORTALITY DURING THE YEAR 1910.

Deaths from stated Causes in Weeks and Months under One Year of Age.

CAUSE OF DEATH.		Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Total Deaths under One Year.
All Causes	(Certified ...	63	17	11	9	100	35	26	19	23	13	11	13	16	11	5	11	283
	(Uncertified ...	12	...	...	...	12	...	1	1	1	...	...	...	...	...	1	...	16
Common Infectious Diseases (12)	{ Small-pox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Chicken-pox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Measles ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
	{ Scarlet Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Diphtheria: Croup ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diarrhoeal Diseases. (32)	{ Whooping Cough ...	...	...	...	...	...	1	...	1	...	2	...	...	2	2	1	1	11
	{ Diarrhoea, all forms ...	...	...	1	1	2	5	1	3	4	1	...	3	2	1	...	...	22
	{ Enteritis (not Tuberculous) ...	...	...	...	1	1	1	...	1	1	...	...	1	...	...	...	...	5
Wasting Diseases. (138)	{ Gastritis, Gastro-intestinal Catarrh ...	...	...	...	...	...	2	1	...	1	...	...	...	...	...	1	...	5
	{ Premature Birth ...	37	7	1	3	48	7	...	...	...	...	...	...	...	...	...	...	55
	{ Congenital Defects ...	9	...	...	1	10	...	...	1	1	...	...	...	...	...	...	1	13
Tuberculous Diseases. (21)	{ Injury at Birth ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Want of Breast-Milk ...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
	{ Atrophy, Debility, Marasmus ...	25	3	6	3	37	9	8	5	1	3	1	...	1	1	1	2	69
	{ Tuberculous Meningitis ...	...	...	...	...	...	1	...	...	...	...	...	2	...	2	...	2	7
	{ Tuberculous Peritonitis: Tabes Mesenterica ...	...	...	...	...	...	2	4	1	2	2	...	1	...	...	...	1	13
Other Tuberculous Diseases	{ Other Tuberculous Diseases ...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
	{ Erysipelas ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Syphilis ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meningitis (not Tuberculous)	{ Rickets ...	...	...	...	...	...	1	...	...	1	...	...	1	...	...	...	...	3
	{ Meningitis ...	...	1	...	...	1	...	...	...	...	...	...	...	1	...	1	1	4
	{ Convulsions ...	2	2	1	...	5	1	4	1	6	2	2	2	3	2	1	...	29
Broncho-Pneumonia	{ Laryngitis ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	{ Bronchitis ...	...	...	...	...	...	2	3	3	1	1	1	...	5	2	...	1	19
	{ Pneumonia ...	...	...	...	...	...	1	1	...	1	...	...	...	...	...	...	...	3
Suffocation, overlaying...	{ Broncho-Pneumonia ...	...	1	...	...	1	...	2	2	1	...	3	2	...	1	...	...	12
	{ Suffocation, overlaying... ...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	2
	{ Other causes ...	2	3	2	...	7	2	2	2	4	2	2	...	1	...	1	1	24
Totals		75	17	11	9	112	35	27	20	24	13	11	13	16	11	6	11	299

DIFFERENTIAL WARD STATISTICS.

WARDS.	DEATHS.							DISEASES.									
	At all ages.	Under 1.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 45.	45 and under 65.	65 and over.	Prematurity.	Diarrheal.	Other Zymotic.	Tuberculous (Phthisis).	Other Tuberculous.	Respiratory.	Cancerous.	Alcoholic.	Circulatory.
POPULATION AT 1901 CENSUS.																	
EAST WYMER.																	
BER STREET 8145	68	12	3	5	3	6	13	26	1	—	1	6	2	18	7	1	14
CATTON ... 9618	102	32	7	3	6	13	19	22	8	3	4	14	4	16	5	—	11
CONESFORD 5784	69	13	2	1	1	4	13	35	2	1	3	—	3	8	2	2	14
COSLAN Y 6326	82	21	10	—	3	7	19	22	3	2	—	12	4	17	1	1	4
FYE BRIDGE 7520	95	22	8	2	1	9	20	33	5	5	4	6	6	11	5	—	20
MOUSEHOLD 10,011	125	40	16	4	4	15	18	28	9	3	5	15	4	24	6	2	11
THORPE ... 6527	83	15	5	2	5	9	22	25	2	2	4	9	2	14	9	2	9
EATON (a) ... 10,481	137	25	7	8	7	12	26	52	6	1	3	11	7	19	18	1	34
EARLHAM (b) 6357	251	17	19	14	11	16	46	128	2	—	29	19	19	31	15	—	36
HEIGHAM ... 6661	93	23	9	1	4	14	18	24	3	3	8	10	3	14	4	1	9
LAKENHAM 5841	97	20	4	2	3	12	16	40	6	2	2	9	4	10	6	1	22
MANCROFT 3640	39	3	—	—	—	4	7	25	2	—	2	2	—	6	5	—	9
NELSON ... 6014	65	17	2	1	1	6	11	27	3	1	2	3	4	9	6	—	10
TOWN CLOSE (c) 6525	195	14	15	19	22	33	50	32	1	—	7	8	17	7	23	4	24
WENSUM ... 6821	44	11	5	2	2	3	6	15	1	—	3	3	2	9	—	—	11
WESTWICK 5462	64	14	4	1	3	8	9	25	2	2	3	6	1	8	5	—	16
WEST WYMER.																	

- (a) Includes Jenny Lind Infirmary.
(b) Includes Union Infirmary and Isolation Hospital.
(c) Includes Norfolk and Norwich Hospital.

The gross population of the City is believed to increase in about the proportion of 1 per cent. per annum; therefore, supposing the Ward populations to have increased proportionally, $\frac{1}{10}$ th should be added to the figures cited.

Total Tenements and Tenements of less than Five Rooms, distinguishing those Occupied by Various Numbers of Persons in the County Borough and City of Norwich and its Constituent Wards, 1901.

WARDS.	Total Tenements.	No. of Rooms in each Tenement.	NUMBER OF OCCUPANTS IN EACH TENEMENT.												No. of Tenements of less than Five Rooms.
			1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12. or more.	
NORWICH, CITY OF	25585	1 2 3 4	231 470 197 186	98 490 440 702	12 229 365 713	10 138 245 597	4 101 178 461	4 34 123 406	...	...	...	...	...	...	359 1485 1724 3582
No. 1 or CONESFORD	1298	1 2 3 4	16 37 18 4	12 26 34 23	1 15 33 22	1 8 18 14	1 1 13 16	1 1 9 7	...	...	...	...	...	...	32 91 147 108
No. 2 or BER STREET	1868	1 2 3 4	12 54 21 24	8 53 31 84	1 15 46 82	1 17 19 66	...	...	...	...	...	...	...	...	22 170 175 442
No. 3 or MANCROFT	842	1 2 3 4	7 38 19 11	2 28 31 17	...	...	...	...	...	...	...	...	...	...	9 74 110 195
No. 4 or WESTWICK	1406	1 2 3 4	50 51 17 19	12 50 38 64	1 20 29 52	1 13 17 34	2 10 12 27	...	...	...	...	...	...	...	66 145 145 260
No. 5 or COSLANY	1561	1 2 3 4	52 50 32 10	34 68 73 70	4 44 52 56	3 28 45 56	2 5 22 32	...	...	...	...	...	...	...	95 221 294 342
No. 6 or FVE BRIDGE	1798	1 2 3 4	42 85 19 11	10 114 57 45	1 53 65 48	1 33 51 58	...	...	...	...	...	...	...	...	54 322 277 296
No. 7 or THORPE	1408	1 2 3 4	3 20 5 5	1 8 13 25	1 14 7 18	...	...	...	...	...	...	...	...	...	5 45 47 134
No. 8 or LAKENHAM	1344	1 2 3 4	3 16 11 25	...	...	...	...	...	...	...	...	...	...	...	3 40 82 466
No. 9 or TOWN CLOSE	1459	1 2 3 4	3 20 9 18	...	...	...	...	...	...	...	...	...	...	...	3 63 75 386
No. 10 or EATON	2469	1 2 3 4	2 12 ...	...	...	...	...	...	...	...	...	...	...	...	2 18 10 55
No. 11 or NELSON	1496	1 2 3 4	2 18 12 23	2 11 22 79	...	...	...	...	...	...	...	...	...	...	4 36 59 298
No. 12 or EARLHAM	1384	1 2 3 4	2 3 5 6	...	...	...	...	...	...	...	...	...	...	...	2 7 16 71
No. 13 or HEIGHAM	1472	1 2 3 4	5 7 2 3	...	...	...	...	...	...	...	...	...	...	...	5 20 7 65
No. 14 or WENSUM	1568	1 2 3 4	11 24 10 15	...	...	...	...	...	...	...	...	...	...	...	12 87 89 237
No. 15 or CATTON	2195	1 2 3 4	8 13 13 10	4 21 36 44	1 7 30 51	...	...	...	...	...	...	...	...	...	13 49 127 245
No. 16 or MOUSEHOLD	2017	1 2 3 4	13 22 4 1	13 26 19 10	2 19 12 15	...	...	...	...	...	...	...	...	...	32 97 64 82

The Deaths of Norwich Citizens *from Zymotic Diseases* included:—

	Scarlet Fever.	Diphtheria.	Enteric Fever.	Measles.	Whooping Cough.	Diarrhoeal Diseases.	Puerperal Fever.	Erysipelas.	Influenza.
Under 5 years of age...	8	6	0	7	18	31	0	1	1
Over 5 years of age ...	4	12	3	1	1	1	1	2	13

A glance at the above table will show how large a proportion of the deaths occurred in children *under 5 years of age*, and also how great a number of these succumbed to Whooping Cough, and Diarrhoeal Diseases.

The deaths under one year of age numbered 296, representing a death-rate of 2·3 per 1000 of the population at all ages.

The Infant Mortality Rate (i.e. the proportion of deaths under one year of age to every 1000 births) was 103·0
In the 77 great towns it averaged ... 115·0

This return for Norwich is more favourable as compared with the 77 towns than was that for last year, when the figures were 119·0 and 120·25 respectively. A special report differentiates the certified causes of death of the infants.

The Death-rate between the ages of 1 and 5 years was 0·9 per 1000 of the population at all ages; in 1909 it was 1·3.

The Death-rate between the ages of 5 to 15 was 0·91 per 1000 of the population at all ages; in 1909 it was 0·54.

The Death-rate between the ages of 15 and 25 was 0·61 per 1000 of the population at all ages; in 1909 it was 0·55.

The Death-rate between the ages of 25 and 65 years of age was 3·9 per 1000 of the population at all ages; in 1909 it was 4·2.

The Death-rate at and over 65 years of age was 4·4 per 1000 of the population at all ages; 1909 it was 4·0.

There were 8 more male than female children born in the city during the year. 135 of the births were children known to be illegitimate. There were 25 deaths under one year of age of *illegitimate* children, or 185 per 1000 *births*—the rate among the *legitimate* children being 98 per 1000 *births*; 59 stillbirths were notified to me during the year.

NORWICH SPECIAL DEATH-RATES FOR 1910.

	Per 1000 of the population at all ages. 1910.	In 1909.	In 1908.
From all Tuberculous Diseases ...	1·6	1·6	1·7
„ Tuberculosis of the Lungs (Phthisis) ...	1·0	1·0	1·1
„ Respiratory Diseases, excluding Phthisis ...	1·7	2·2	2·0
„ Heart Disease ...	1·6	1·5	1·6
„ Scarlet Fever ...	·09	·07	·03
„ Diphtheria ...	·14	·14	·23
„ Enteric (Typhoid) Fever ...	·23	·04	·3
„ Puerperal Fever ...	·007	·008	·008
„ Erysipelas ...	·02	·04	·06
„ Measles ...	·06	·65	·008
„ Whooping Cough ...	·15	·016	·2
„ Diarrhœal Diseases ...	·2	·4	·4
„ Influenza ..	·11	·09	·2
„ Alcoholism ...	·13	·15	·10
„ Venereal Diseases ...	·03	·06	·03

The following Deaths occurred in *Public Institutions*:—Norfolk and Norwich Hospital, 154; the Union Infirmary, 146; the Isolation Hospital, 28; Jenny Lind Infirmary, 18; the Prison, 0; the Barracks, 0.

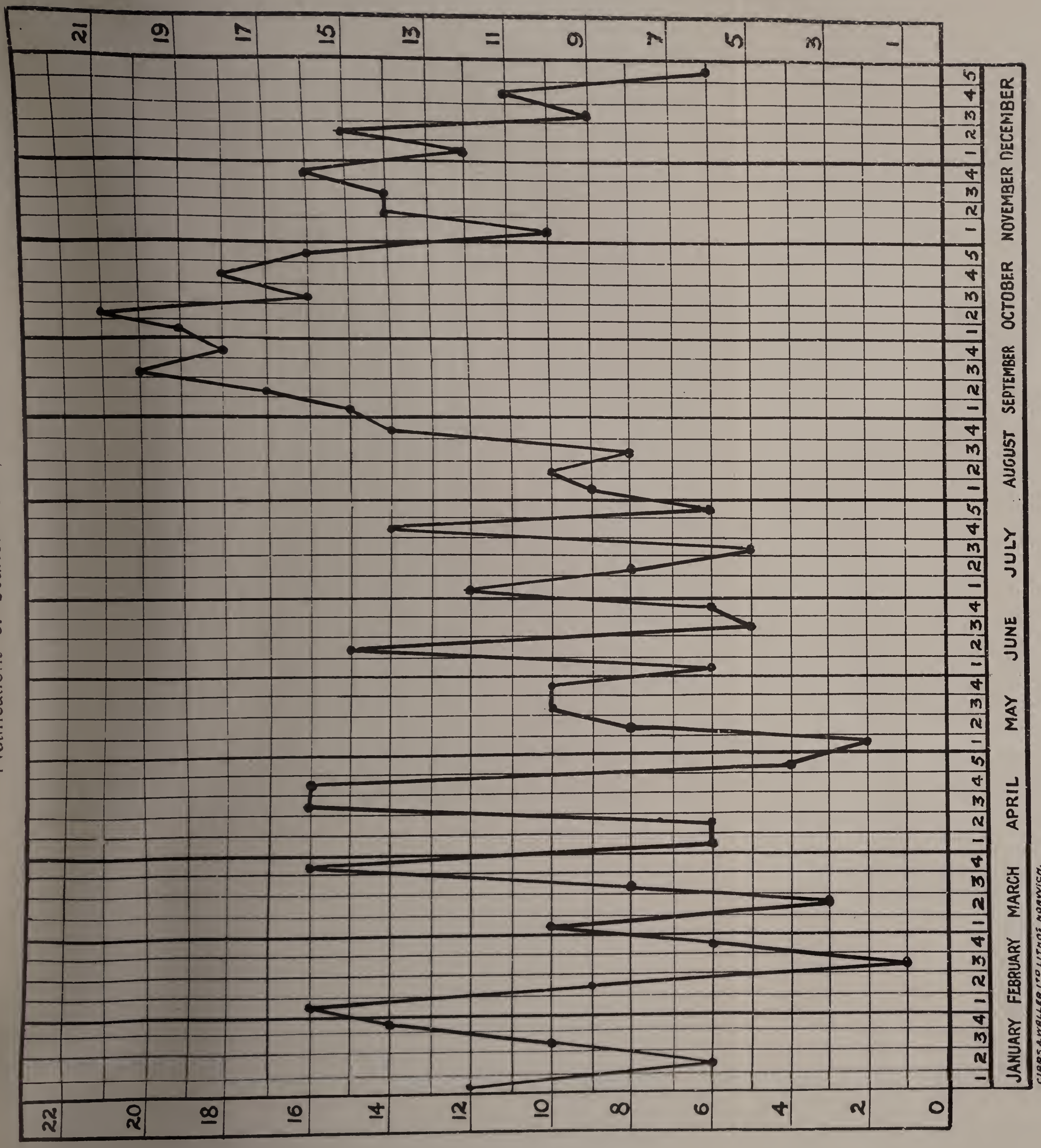
Inquest cases amounted to 4·7 per cent. of deaths from all causes.

In the 77 great towns the average was 8·07 per cent.

Deaths in Public Institutions amounted to 20·8 per cent.

In the 77 great towns the average was 27·4 per cent.

Notifications of Scarlet Fever, 1910.



Uncertified deaths (i.e., death certificate not signed by a registered medical practitioner) amounted to 1·3 per cent.

Average in 77 great towns, 0·8 per cent.

14 of the deaths of infants were certified—neither by a Medical Practitioner nor by the verdict of a Coroner's jury. 14 of these deaths occurred within the first week of life; assigned causes, "Want of Vitality," 10; "Asthenia," 1; and "Premature Birth," 2; Asphyxiated, 1.

It is not creditable to the State, as the Guardian and Conservator of the prospective interests of the race, to lose a single subject without being furnished with a certificate of the cause of death, properly attested. The law now allows a Registrar, almost always a layman, to accept a certificate from an unqualified person, provided that he, the Registrar, is persuaded that deception is not being practised. The proper course is, without doubt, to hold an inquiry in every such case, and, where needful, a post-mortem examination. These steps will probably be taken only when the registration of the cause of death is placed under the control of the Sanitary Authority.

I caused enquiries to be made in 290 special cases whether the *child dying under one year of age was insured*, and found that 30 per cent. of these children were insured.

There were 12 inquests held upon children under one year of age by the Coroner or his Deputy, 2 of these children being illegitimate.

Of the 25 deaths of illegitimate infants, 5 were certified to be due to Diarrhœal Diseases, 4 to Wasting Diseases, 4 to Lung Diseases, 1 to Tuberculous Diseases, 2 to "Convulsions," 1 to Gastritis, 4 to Premature Birth, 2 to Insufficient Nourishment, 1 to Congenital Malformation of Heart, and 1 to "Want of Breast Milk."

ISOLATION HOSPITAL.

During the year 577 patients with Scarlet Fever, inclusive of 4 members of Staff, 235 with Diphtheria, and 13 with Enteric Fever were removed to and treated in the Hospital. In 1909 the corresponding figures were 437, 239, and 18.

Of the 828 cases removed to the Hospital 460 were males and 368 females. In 1909 these proportions were 315 and 383 respectively.

With Scarlet Fever 136 of the patients were under 5 years of age.

„	„	308	„	„	between 5 and 10 years of age.
„	„	83	„	„	between 10 and 15 years of age.
„	„	38	„	„	between 15 and 25 years of age.
„	„	25	„	„	over 25 years of age.

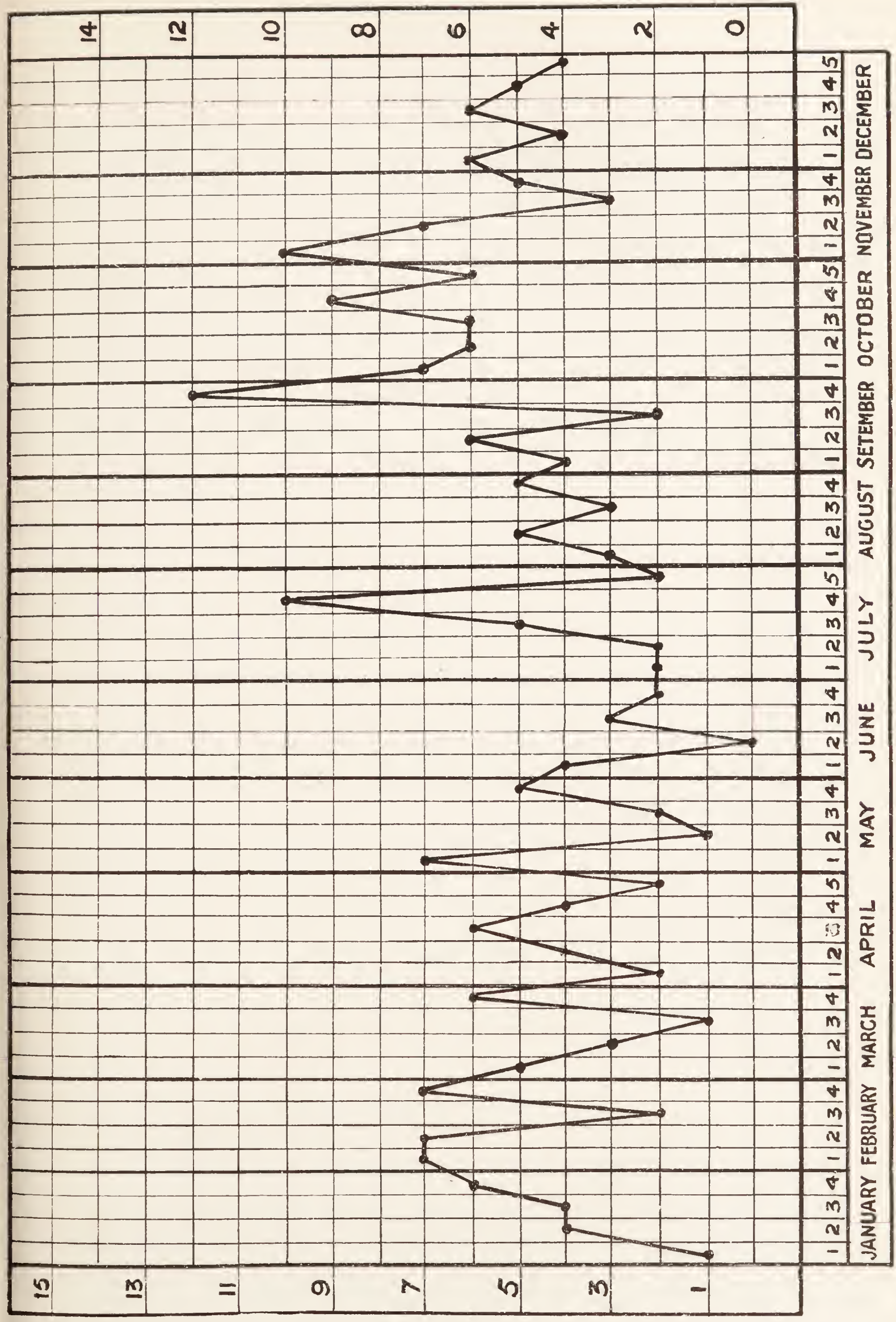
With Diphtheria 64 of the patients were under 5 years of age.

„	106	„	„	between 5 and 10 years of age.
„	33	„	„	between 10 and 15 years of age.
„	20	„	„	between 15 and 25 years of age.
„	12	„	„	over 25 years of age.

With Enteric Fever 1 of the patients was under 5 years of age.

„	„	1	„	„	between 5 and 10 years of age.
„	„	5	„	„	were between 10 and 15 years of age.
„	„	0	„	„	between 15 and 25 years of age.
„	„	6	„	„	over 25 years of age.

Notifications of Diphtheria, 1910.



As in previous years the greatest number of patients were under 10 years of age. 3 infants were admitted with mothers.

There were 26 deaths in the Hospital during the year, 10 from Scarlet Fever, 15 from Diphtheria, and 1 from Enteric Fever. The total Hospital Death-rate was 3·1 per cent. for all diseases, for Diphtheria 6·4 per cent., Scarlet Fever 1·7 per cent., Enteric Fever 7·6 per cent.

There were 18 "return" cases during the year, or 2·6 per cent.—a result which bears testimony to the vigilance exercised in discharging patients.

Three-fifths of the mortality was due to Diphtheria.

The Wards were, as usual, kept bright and cheerful of aspect with flowers and plants throughout the year; presents from the friends and relatives of the patients, many of them quite poor people. The "Toy Fund," too, has been kept in tolerably sound condition chiefly by the donations of patients and their friends. The Hospital Committee made a special grant to provide toys at Christmas. The grounds about the Hospital continue to improve in appearance, and the garden is fertile. Some 8000 articles passed through the steam disinfecter.

INFECTIOUS DISEASES.

Scarlet Fever.—595 notifications of Scarlet Fever in 526 dwellings were sent to me during the year. There were 136 secondary infections, *i.e.*, second or third cases in the same dwelling. The Chart gives a graphic representation of the prevalence, week by week, of the disease. I regard the occurrence

of Scarlet Fever in a proportion over one case to every ten thousand of the population a week, or, roughly, 12 cases a week, as constituting an "epidemic" condition of the disease.

Of the cases notified to me 45·8 per cent. occurred in males and 54·2 per cent. in females; 26·1 per cent. of the patients were *under 5 years of age*, 47·1 per cent. *between 5 and 10 years of age*, 17·7 per cent. *between 10 and 15 years of age*, 6·3 per cent. *between 15 and 25 years of age*, and 2·8 *were over 25 years of age* (73·2 per cent. of the cases occurred in children under 10 years of age).

From enquiries conducted specially I found that of the infected dwellings 5·41 per cent. possessed only *one sleeping room*, the average number of the occupants being 4·0 persons; 32·95 per cent. possessed *two sleeping rooms*, the average number of the occupants being 2·8 persons *per room*; 52·23 per cent. possessed *three bedrooms*, the average number of the occupants being 2 persons *per room*; and 9·41 per cent. possessed *four or more bedrooms*, the average number of occupants being 1·5 persons *per room*.

As regards the disposal of excrement, 7·52 per cent. of the infected dwellings used "bins," 13·15 per cent. "pail" closets, and 79·33 per cent. water-closets.

I was not able to trace Scarlet Fever to any special milk supply, and am disposed to think that a great majority of the cases owed their infection to personal contact. As to the origin of this disease, we are in greater doubt than is the case with other zymotic ailments, and so long as this uncertainty continues our operations for preventing those conditions from arising which favour its development will be *pari-passu* imperfect, and our practical work confined rather to dealing with effects than causes. I am inclined to think that *all the excretions of an affected person are infectious for a time, as well as the breath*.

Diphtheria.—264 notifications were sent in during the year, and deducting cases which proved on bacteriological examination not to be true Diphtheria, there were 246 victims to this disease. There were 18 deaths recorded during the year, 1 of the fatal endings occurred in the Norfolk and Norwich Hospital, and 18 in the Isolation Hospital. The special death-rate being 1 in 13·5 persons attacked. In 1909 it was 1 in 14.

The cases notified to me occurred in 245 dwellings—there being 19 *instances of secondary infection*, that is more than one case occurring in the same dwelling, or 1 to every 13 primary cases. Of the persons attacked, 46·0 per cent. were males and 54·0 per cent. females.

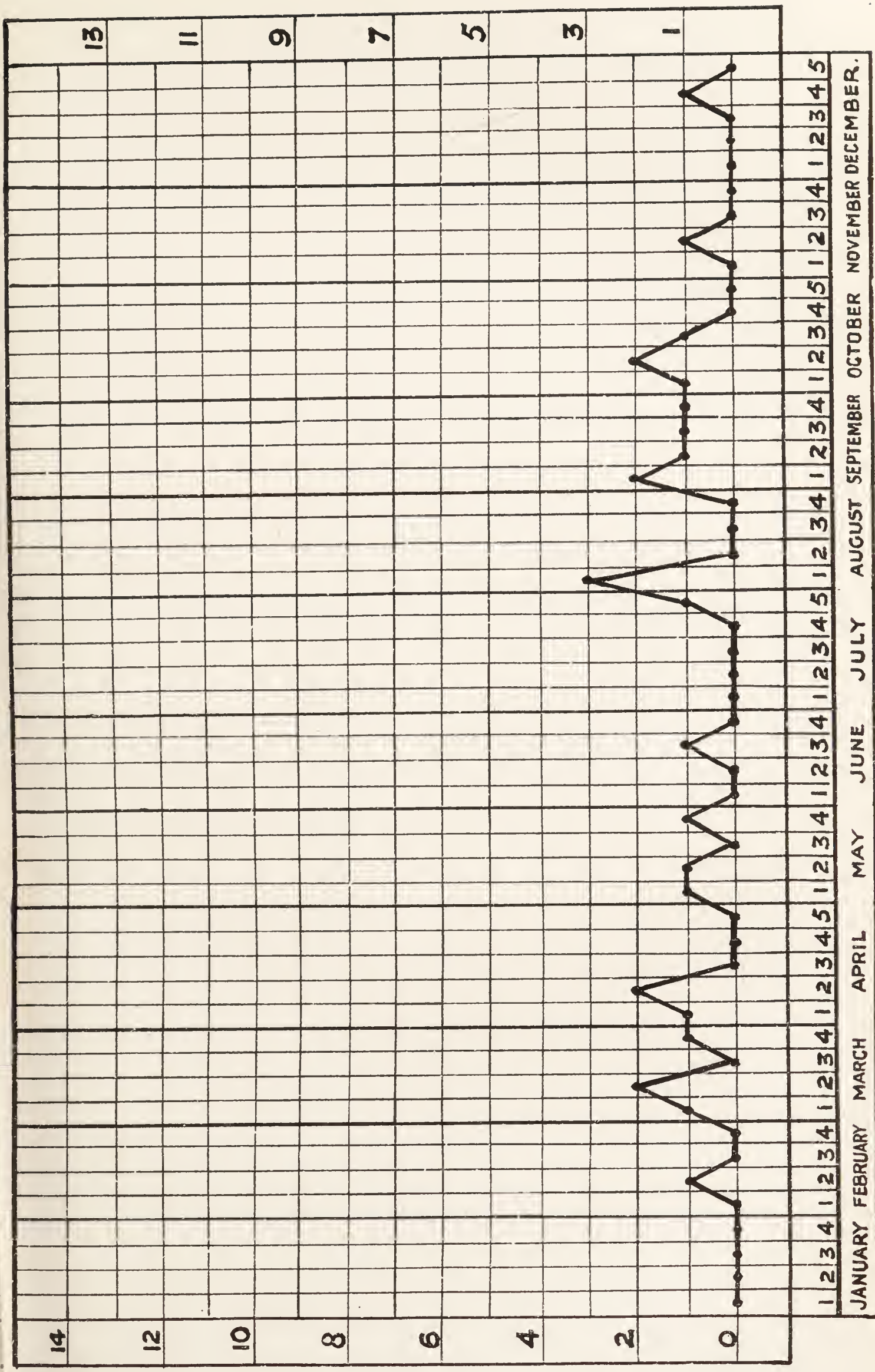
25·10 per cent. of the patients were under 5 years of age, 47·06 per cent. between 5 and 10 years, 13·33 per cent. between 10 and 15 years, 10·20 per cent. between 15 and 25 years, 4·31 per cent. over 25 years of age (72·3 per cent. *were in persons under 10 years of age*).

Systematic enquiries into the home surroundings of the patients entitle me to state that 4·31 per cent. of the infected dwellings possessed *only one sleeping room*, the number of the occupants averaging 4; 25·89 per cent. of the houses possessed *two sleeping rooms*, the average number of the occupants (of each room) being 2·68; 56·86 per cent. of the houses had *three bedrooms*, the average number of occupants being 1·84; and 12·94 per cent. of the dwellings possessed *four or more bedrooms*, with an average population of 1·71 persons per bedroom. 7·46 per cent. of the affected households made use of “*bins*,” 12·5 used *pail-closets*, and 80·39 per cent. *water-closets*. In 8·0 per cent. of the houses there was evidences of *dampness* of the walls or flooring, and due commonly to the *absence of a “damp course”* in the former, and of a layer of concrete below the latter. I caused special enquiries to be made concerning the character of the paving,

etc., of the yards adjacent to the infected dwellings, and found that 76·08 per cent. had yards covered with some *material impervious to fluids*; that 6·27 per cent. had yards partly paved, 5·14 per cent. cobbled yards, and 14·51 per cent. yards *without any paving at all*. In other words 24·0 per cent. of the houses *adjoined yards offering greater or less facilities for the soakage of fluid into the soil about them*. 17·25 per cent. of the houses possessed no sinks, which means that *all household "slops," etc., and other waste fluids would be pitched into and about the gutter in the yard*.

The Chart exhibits the variation in the prevalence of Diphtheria week by week throughout the year. I retain my belief that any condition of the atmosphere or of the surroundings which tends to produce a congested condition of the tissues lining the throat—such as damp, foggy weather, particularly when associated with low barometric pressure, which leads to engorgement and relative congestion of the superficial vessels; or any irritating influence such as the noxious effluvia constantly given off by the contents of "bins," "pail-closets," sewer air, fish and other refuse, etc.—distinctly favours the development of Diphtheria.

Enteric (Typhoid) Fever.—36 cases were notified as Enteric Fever during the year, one of them being a secondary infection. 10 of the cases notified, proved on bacteriological examination, to be either paratyphoids or mistakes in diagnosis. As the relative prevalence of this disease has been commonly accepted criterion of the sanitary condition of a district, its associations and surroundings become of special interest; and the importance of the subject justifies a more detailed account than is requisite in dealing with other diseases; the more particularly as Enteric Fever has been rather *endemic* than epidemic in its character with us. The association of shell-fish with this disease is noticed in the preface.



GIBBS & WALLER, LTD LITHO IN ENGLAND

The following table gives the notifications of Enteric Fever in each year from 1880 to 1910 inclusive, and the mortality from the disease. There were 3 deaths registered in 1910, 1 of them in a Public Institution.

180	{ notifications of Enteric F. in }	1880 with 37	{ deaths representing a mortality rate of }	20·5 %
50	„	1881 „ 15	„ „	30·0 „
47	„	1882 „ 8	„ „	17·4 „
34	„	1883 „ 11	„ „	32·3 „
121	„	1884 „ 30	„ „	24·8 „
584	„	1885 „ 92	„ „	15·5 „
262	„	1886 „ 39	„ „	14·5 „
136	„	1887 „ 20	„ „	14·7 „
171	„	1888 „ 19	„ „	11·1 „
166	„	1889 „ 22	„ „	13·2 „
176	„	1890 „ 31	„ „	7·6 „
163	„	1891 „ 21	„ „	12·8 „
106	„	1892 „ 19	„ „	17·9 „
314	„	1893 „ 36	„ „	11·4 „
150	„	1894 „ 22	„ „	14·6 „
226	„	1895 „ 24	„ „	10·6 „
196	„	1896 „ 20	„ „	10·2 „
234	„	1897 „ 33	„ „	14·0 „
259	„	1898 „ 48	„ „	18·5 „
144	„	1899 „ 20	„ „	14·0 „
193	„	1900 „ 12	„ „	7·4 „
127	„	1901 „ 15	„ „	11·8 „
57	„	1902 „ 5	„ „	8·7 „
92	„	1903 „ 5	„ „	5·4 „
111	„	1904 „ 15	„ „	13·5 „
53	„	1905 „ 9	„ „	17·0 „
89	„	1906 „ 11	„ „	12·3 „
87	„	1907 „ 14	„ „	16·0 „
216	„	1908 „ 36	„ „	16·6 „
45	„	1909 „ 5	„ „	11·0 „
36	„	1910 „ 3	„ „	8·3 „

It will be noticed that the death-rate in 1880 from this disease averaged 20·5 per cent. of the cases notified, or, roughly, 1 case in every 5, and that last year the death-rate was 1 case in every 12. As I pointed out in previous reports, it does not follow necessarily that these figures represent the true state of the facts; that there has been, on the whole, a diminution in the case of mortality cannot be doubted—but it must be remembered that most probably

a number of the milder cases of the disease were not recognised and notified in 1880. Increasing skill in diagnosing the disease in its lighter form has, in my judgement, led to a more accurate correspondence between the number of notifications sent in and the actual amount of the disease; although I still think that a number of cases of Enteric Fever of what is known as the "Ambulatory" type escape notification, and never receive medical treatment. So that here, as elsewhere, the notifications furnish a reliable guide to the relative prevalence of the disease, but must not be regarded as representing accurately the full amount. By "Ambulatory" Typhoid is meant so mild an attack that the patient keeps walking about, pursuing his or her ordinary vocation in life, never ill enough to need a doctor, having some feeling of malaise and what is thought to be some transient diarrhœa.

Differentiating some characteristics of the cases notified in 1910, and comparing them with those notified in, 1909, 1908, 1907, I find that as regards

- (a) *Sex.* 55·5 per cent. of the cases occurred in males and 44·5 per cent. in females; the average percentages of the preceding three years were 49·6 males and 50·4 per cent. females. Females are commonly more home-keeping in their habits than the males, on the other hand, the latter expose themselves to more extended means of infection, especially as casual purchasers of shell-fish from stalls, etc.

(b) <i>Age.</i>						Average percentage of the preceding three years.
11·42	{ per cent. of the patients were under 5 years of age }					4·5
11·42	„	„	between 5 and 10			15·2
8·58	„	„	„	10	„ 15	16·2
28·58	„	„	„	15	„ 20	14·5
8·58	„	„	„	20	„ 25	14·0
14·28	„	„	„	25	„ 35	16·4
8·57	„	„	„	35	„ 45	12·2
8·57	„	„	over 45			6·0

It will be noticed that 33·0 per cent. of the cases occurred in children under 15 years of age, and that the average number of such cases in the preceding three years was 35·0 per cent. of the total number.

(c) *Crowding.*

				Average number of occupants per bedroom.
8·57	{ per cent. of the affected dwellings had only 1 bedroom }			4·66 persons
28·57	„	„	„ 2 bedrooms	2·45
42·86	„	„	„ 3 „	2·33
20·0	„	„	„ 4 or more	1·45

The average corresponding percentage of the preceding three years were—1 bedroom, 6·6 per cent.; 2 bedrooms, 25·6 per cent.; 3 bedrooms, 51·0 per cent.; 4 or more bedrooms, 16·6 per cent.; the relative crowding being 3·33, 2·2, 2·0, and 1·33 persons *per room*. In estimating the influence of “man-crowding,” I have only concerned myself about the number of sleeping-rooms, *the rooms in which crowding becomes important*. The census returns are helpful here only in respect of tenements consisting of one room, which room must, of necessity, be used for bed and living-room; and when it is remembered how large a proportion of these are occupied by one old man or woman living alone, the incidence of the disease in houses containing one bedroom probably is much heavier than the figures represent.

(d) *Water supply.*

94·28 per cent. of the affected dwellings were supplied with the Company’s water.

5·72 per cent. of the affected dwellings were supplied from wells.

Of the preceding three years the (averaged) corresponding proportions were 96·6 and 3·4 per cent.

The proportions in which houses are supplied with "pipe" or with well water are altering quietly but *continuously*; each year sees an increase in the number of houses supplied by the Company, and a decrease in the number of those drawing water from wells. I believe that at the present time over 98·0 per cent. of the houses are supplied by the Company with water. 3 wells were closed during the year, the water drawn from them being shown, by chemical analysis alone, to be unfit for drinking purposes. The recurrence of Typhoid makes it necessary for us to take every possible precaution with regard to water. The Water Company expends great care upon the filtration and storage of the water it supplies to the citizens, and has it chemically and bacteriologically examined at regular intervals, and short of the demonstration by bacteriological experts of the specific bacillus of Enteric Fever being distributed by the Company with the water it abstracts from the Wensum, I see no sufficient reason for dissenting from the opinion expressed by the Official Analysts that it is "a perfectly safe water for dietetic use."

(e) *Milk Supply.*

Corresponding (averaged)
proportions in the pre-
ceding three years.

8·58 per cent. of the patients drank no milk	8·0
11·42 per cent. of the patients drank it	
in the raw, <i>uncooked</i> condition ...	13·3
80·0 per cent. of the patients drank it only,	
when first boiled or cooked in puddings	
or in hot tea, etc.	73·4
0·0 per cent. of the patients used condensed	
milk	5·1

Milk, I think, had, as in preceding years, little to do with propagating Enteric Fever amongst us; its influence, anyway, must have been limited, for practically it is likely only to be a direct source of infection in 11·42 per cent. of the cases among the drinkers of the *uncooked* article. At the same time I am bound to say that, but for the fairly general cooking of the milk consumed among us, we are practically at the mercy of the surrounding

districts; so large a portion of our supply comes from outside the City. The appointment of a Medical Officer of Health for the County of Norfolk will aid us materially in promoting concerted action between the City and County Sanitary Authorities.

(f) *Shell-fish.*

The marked association of this article of diet with Enteric Fever in 1908 makes it interesting to record that in 1910 30 per cent. of the cases admitted having consumed shell-fish prior to the attack.

(g) *Disposal of excrement.*

5·71 per cent. of the affected dwellings used "bins."

8·58 ,, ,, ,, pail closets.

85·71 ,, ,, ,, water closets.

In the preceeding three years the corresponding (averaged) percentages were 11·6 per cent. "bins"; 18·7 pail closets; 69·7 water closets. The change to the water carriage system progresses steadily. Last year over 1,200 water closets were substituted for other types of closet. At the present time I estimate the number of houses provided with water closets at 72·5 per cent. of the total number.

(h) *Household Drainage.*

At 85·0 per cent. of the affected houses the Inspectors reported the drainage as "good." In the preceding three years the corresponding (averaged) percentage was 77·0 per cent.

Which means that in the others some defect in the drainage such as no sink (which again means that all slop and other waste water would be pitched about the yard), sink waste-pipe not disconnected, or loose and defective "traps," etc., existed.

(i) *Character of yard.*Average of the
preceding
three years.

2·86 per cent. of the affected dwellings had					
no yard	...	...	...	...	0·3
62·86 per cent. of the dwellings had paved					
yards	...	...	...	...	64·2
17·12 per cent. of the dwellings had <i>unpaved</i>					
yards	...	...	...	...	19·4
8·58 per cent. of the dwellings had <i>partly</i>					
<i>paved yards</i>	...	...	...	...	7·8
8·58 per cent. of the dwellings had <i>cobbled</i>					
yards	...	...	...	...	8·0

In other words, 33·0 per cent. of the dwellings had yards more or less liable to have the *subsoil soddened with moisture and impurities*. I have drawn attention repeatedly to the importance of having the soil which adjoins a dwelling covered with some material *impervious to fluids*, else it cannot be kept dry. A number of the poorer dwellings in this City have no properly constructed “damp course” in the walls, and, in addition, have not had a thick layer of concrete laid under the bottom floors; in such cases moistening of the subsoil must lead to dampness in the dwelling, to say nothing of the deleterious ground air which will be forced upwards by the rising of the ground-water from time to time; and always be more or less sucked into the dwelling, owing to its atmosphere being warmer.

- (j) *Food store.* 25·71 per cent. of the affected dwellings had food stored *in a ventilated receptacle*; and 8·5 per cent. of the dwellings had *the household food stored in an unventilated receptacle (i.e., having no communication with the external air)* in some part of the house, other than the living-room; and in as many as 62·86 per cent. of the dwellings the food was stored *in some unventilated receptacle in the actual living-room*; and 2·86 stored it in a ventilated receptacle

in the living-room. In the preceding three years the food store was some unventilated receptacle *in the actual living-room* in 79·0 per cent. of the affected dwellings.

It is worthy of notice that in 65·0 per cent. of the affected dwellings the food was stored in the living-room, and therefore *in an atmosphere more or less stale and impure*. Without assuming a direct connection between such food and a disease like Typhoid, it will be obvious that articles of food, such as milk, butter, bread, etc., kept in such surroundings become contaminated easily with impurities.

(k) *Nearness to sewer gratings and gullies.*

40·0 per cent. of the affected dwellings were

within 20 ft.	28·4
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8·8 per cent. of the affected dwellings were

within 40 ft.	21·1
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Average of three
preceding years.

The remainder were over 40 ft. These measurements were taken because a stench from a grating or gully has been charged with occasioning Typhoid so constantly by people living near; my own belief is *that pollution of the neighbouring atmosphere with sewer air lowers the resisting powers of the body*, and thus causes those exposed to so deleterious an influence to fall more easily a victim to disease; emanations from collections of excrement in "bins" and pail-closets, and from heaps of decaying refuse, act in the like manner as powerful predisposers to disease.

(l) *Occupations of house-holders, &c.*

Blacksmith, 1; Bottle Washer, 1; Builder, 1;
Carman, 1; Charwoman, 1; Clerks, 2; Day Girl, 1;
Dressmaker, 1; Engineer, 1; Insurance Agent, 1;
Labourers, 5; Labourers' Wives, 2; Milkman, 1;
Pawnbroker, 1; Policeman, 1; Printer, 1; Publican,
1; Shoemakers, 9; Tailor, 1; Typist, 1; Window
Cleaner, 1.

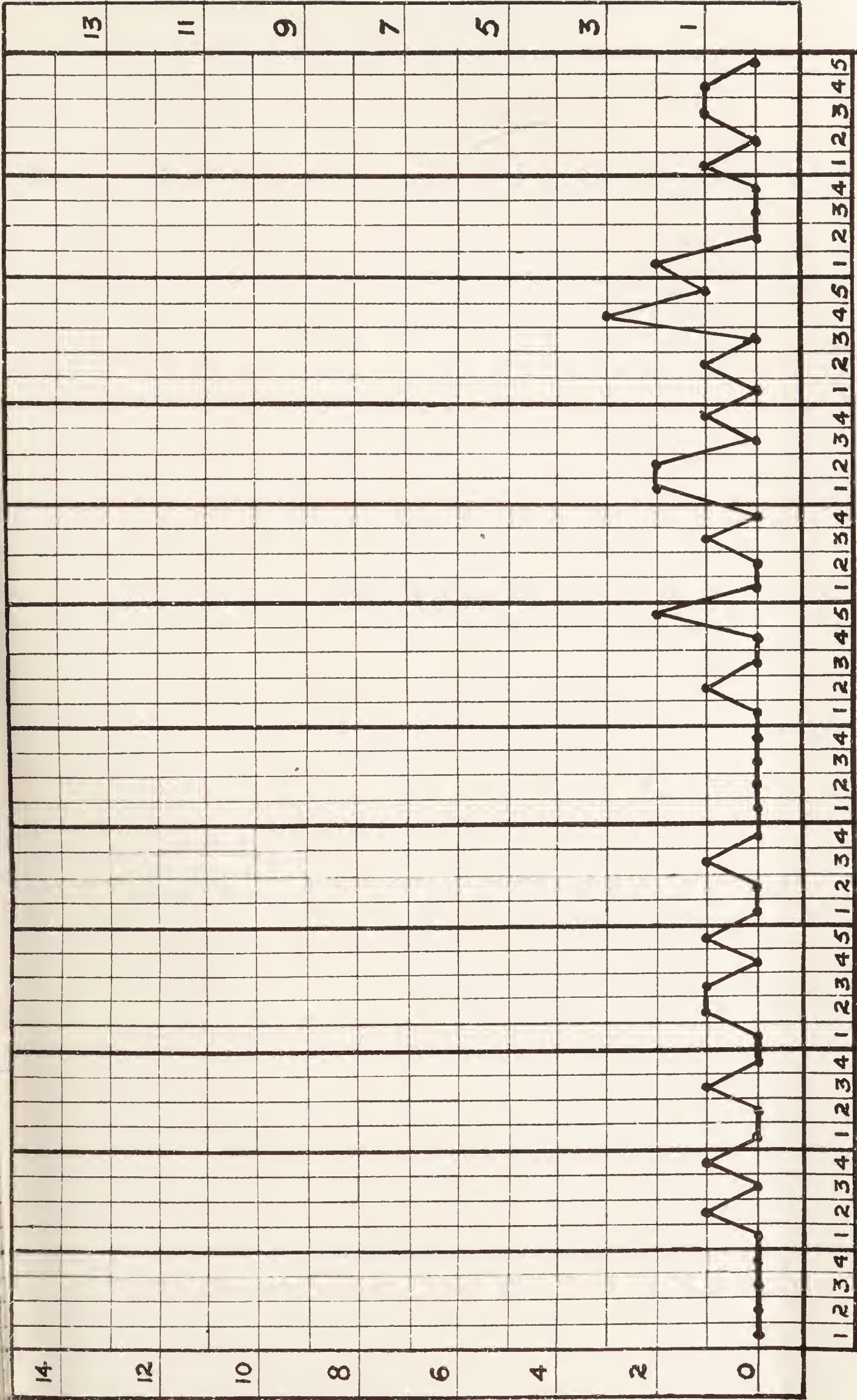
(m) Secondary cases.

In 1 dwelling more than one member of the household contracted the disease.

Puerperal Fever.—Only one notification of this dangerous child-bed fever was sent in during the year, and that was a fatal case. Supposing the notifications to represent all the cases which occurred, the death-rate, 100 per cent. was a high one, the average death-rate for the preceding three years having been 45·0 per cent. of the notified cases. Puerperal Fever being a preventible disease, we were entitled to look for a diminution in the mortality from it. I forbid the nurse or midwife in attendance to go to another confinement for a period, and then only after a thorough cleansing and disinfection of her clothing and person, and, as far as possible, dwelling. The Medical Practitioners in the City I have found anxious to adopt all reasonable precautions, the chief being a temporary abstention from obstetric practice. Rigorous antiseptic precautions in obstetric practice furnish the best means of preventing the development of the disease, and as our midwives have now to be registered and are trained more scientifically, we may look justifiably for a steady lessening of Puerperal Fever; more particularly as parturient women themselves come to understand the vital importance of scrupulous cleanliness being observed by themselves, their attendants, and in all the surroundings. The Midwives' Act should enable us to maintain a more vigorous control over this disease, as in 1910, certain additional provisions came into force.

Erysipelas.—Forty-five cases were notified to me. Three deaths were registered from it. In 1909 the figures were 45 and 5 respectively. Erysipelas of a fatal type cannot be regarded as having been prevalent in the City.

Measles.—Measles was not notified during the year, and not more than 8 deaths were attributed to it. This dangerous disease, particularly on account of its liability to set up lung complications;



GIBBS & WALLER, L^{TO} LITHO^S NORWICH.

List of Ecclesiastical Parishes in the City of Norwich, with the Number of Inhabited Houses and the Population enumerated in each at the Census of 1901.

	Population.	Inhabited Houses.	Number of Persons per House.
*Drayton, S. Margaret, with Hellesdon, S. Mary (part of)	950	203	4·7
†Earlham, S. Mary, with Bowthorpe, S. Michael (part of)	320	73	4·4
Eaton, S. Andrew	3,152	678	4·6
HEIGHAM :			
Holy Trinity ...	10,956	2,720	4·0
S. Bartholomew ...	11,584	2,570	4·5
S. Philip ...	5,350	1,377	3·9
S. Thomas ...	5,125	1,008	5·0
Lakenham, S. Mark ...	6,113	1,437	4·3
New Catton. Christ Church ...	7,985	1,779	4·4
NORWICH :			
All Saints with S. Julian ...	1,962	460	4·3
S. Andrew ...	500	114	4·4
S. Augustine ...	2,373	554	4·3
S. Benedict ...	1,865	443	4·2
S. Clement with S. Edmund ...	836	192	4·4
S. Etheldred with S. Peter Southgate ...	1,694	378	4·5
S. George of Colegate ...	1,351	324	4·2
S. George Tombland ...	729	131	5·6
S. Giles ...	1,211	288	4·2
S. Gregory with S. Lawrence ...	963	215	4·5
S. Helen ...	541	81	6·7
S. James with Pockthorpe ...	9,113	1,848	5·0
S. John de Sepulchre ...	2,732	594	4·6
S. John Maddermarket ...	262	71	3·7
S. John the Baptist, Timberhill ...	1,015	235	4·3
S. Margaret with S. Swithin ...	1,114	316	3·5
S. Martin at Oak ...	2,432	577	4·2
S. Martin at Palace ...	584	151	3·9
S. Mary at Coslany ...	1,208	293	4·1
S. Mary in the Marsh ...	451	78	5·8
S. Michael at Plea ...	106	29	3·7
S. Michael at Thorn ...	1,406	345	4·1
S. Michael Coslany ...	647	157	4·1
S. Paul ...	5,434	1,198	4·6
S. Peter Hungate ...	258	67	4·0
S. Peter Mancroft ...	1,557	308	5·0
S. Peter Permoungergate ...	2,570	589	4·4
S. Saviour ...	1,180	307	3·8
SS. Simon and Jude ...	339	67	5·0
S. Stephen ...	3,235	715	4·5
Thorpe, S. Matthew ...	6,450	347	4·8
†Trowse, S. Andrew, with Lakenham, S. John the Baptist and All Saints (part of) ...	3,786	789	4·3
Extra Parochial (Liberty of Town Close) ...	299	61	4·9

* The Parish of Drayton S. Margaret with Hellesdon S. Mary is partly in the Civil Parishes of Drayton and Hellesdon. The total number of Inhabited Houses was 371, and the Population 1,984.

† The Parish of Earlham S. Mary with Bowthorpe S. Michael is partly in the Civil Parish of Bowthorpe. The total number of Inhabited Houses was 85, and the Population 382.

‡ This Parish is partly in the Civil Parish of Trowse Newton. The total number of Inhabited Houses was 951, and the Population 4,553.



and, on account of its lengthy incubative period and infectivity, is a source of administrative trouble to all concerned with the control and management of schools, especially infant schools. Notification would aid us to bring about an alteration in the attitude of mind assumed by many of the mothers of families in Norwich towards this highly dangerous infective disease, and the criminality of carelessness in dealing with it. In 1909 81, and 1908, only one death was registered as being due to this disease.

Whooping Cough proved fatal to 19 children last year. This is a result for 1910 which is slightly more satisfactory than that for the preceding year, when 20 deaths from the disease were registered. This disease is highly infectious, and dangerous too. I gain information of its prevalence among children attending the schools only by indirect methods, and of its fatality from the death certificates.

Diarrhœal Diseases carried off 32 persons, 29 of whom were *under 1 year of age*, the greater number succumbing (as is customary) in the third quarter of the year. In 1909 there were 54 deaths from these diseases. I attribute the prevalence of and mortality from these diseases to *bad feeding, and particularly to carelessness in the treatment and storage of milk and other food, to flies, and to soil and air pollution, due to the retention of filth upon the premises.*

Influenza.—14 deaths were certified to be either directly or indirectly due to this disease; in 1909 the number of deaths ascribed to it was 11.

Cancer.—118 deaths were attributed to malignant growths during the year; in 1909 the number was 124; in 1908 it was 149.

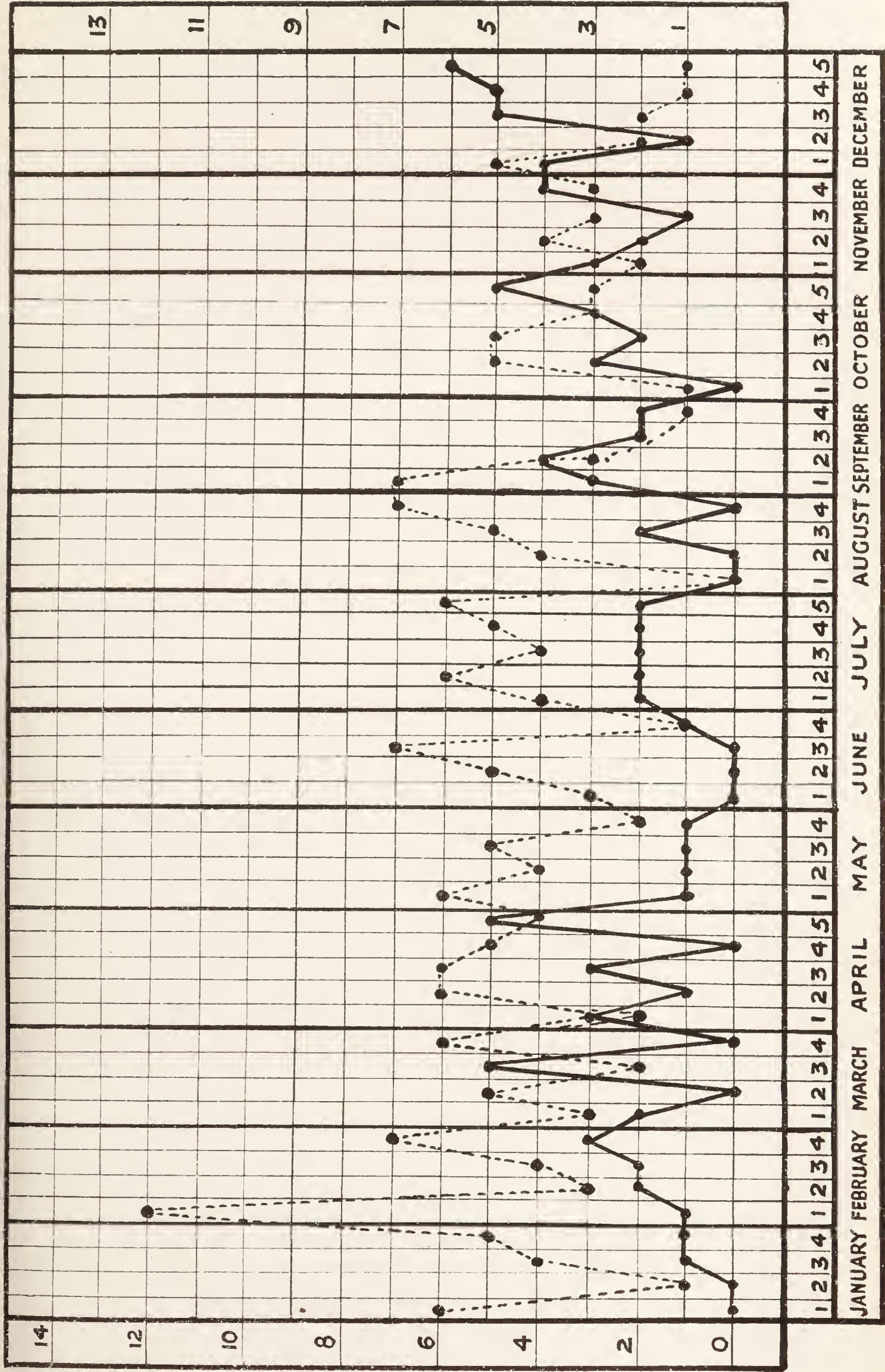
Septic Diseases (other than those specified) caused the deaths of 56 persons; in 1909, 45; in 1908, 40.

THE TUBERCULOUS DISEASES.

(Forms of the diseases called commonly "Consumption.") 133 deaths were certified to be due to tuberculous disease of the Lungs (Phthisis) and 72 to other forms of tuberculous infection; making in all a total of 205 *deaths from the tuberculous diseases*. This is below the average for the preceding sixteen years, which average amounts to 228 *deaths from the tuberculous diseases per annum*. Nothing but benefit to the healthiness of our community can result from the general apprehension of the fact that the tuberculous diseases are dangerous—the phthisical type particularly. I feel that I have done well in insisting, as for many years I have done, upon the dangers to the community of these *catchable and largely preventible diseases*. The chart shows the weekly fluctuations in the tuberculous death-rate throughout the year; and it will be worth the reader's while to compare this chart with the charts of the seventeen preceding years. The returns for the seventeen years confirm the fact that the *tubercle bacillus* (the micro-organism of whose pernicious activity these diseases furnish us with reliable information) is no stranger among us. It flourishes practically wherever people are crowded together, and may be said to be entrenched in all old cities. This lethal bacillus, which has cost, and is still costing us, as a nation, directly or indirectly, millions of money, and goes on reaping its untimely harvest of lives year after year, is most at home in dark, ill-ventilated places, and is much favoured by overcrowding in any dwellings. *Sunlight and fresh air, fortunately, are destructive to it*; which fact helps to explain why sanitary experts claim that every dwelling shall have good *air space*, and freedom for admission of sunlight into and about it.

In 1893 I first offered to disinfect gratuitously the rooms, which had been occupied by a tuberculous patient, after the removal by death, or otherwise, of the victim of the *tubercle bacillus*; and there has been a really remarkable growth of opinion on the part of the public that it is a wise step to have rooms, etc., disinfecting after a death has occurred from tuberculous diseases; and one can only hope:

1910.



that the practice will become general. I hope also that the members of the medical profession will recommend disinfection to the friends of their patients in all cases of death, or of removal. It is, at any rate, encouraging to find that, within 10 years, the relatives of more than nine-tenths of the fatal lung cases consented to have this precautionary measure adopted *for the protection of the other inmates of the dwelling*.

The *tubercle bacillus* is *coughed up* constantly in large numbers *with the spittle* of consumptive people, and this same bacillus is present commonly in the discharges from tuberculous glands, abscesses, &c. Should hæmorrhage occur, the specific bacilli will pretty certainly be carried out with the blood. Hence the importance of either rigidly disinfecting (boiling is a good method) or burning any rags, clothes, &c., soiled with the blood or expectoration. For if the extruded matter be left to dry, it will, in time, become fine dry dust; which dust may be kicked or brushed up into the air, and as it contains the potentially active bacilli, it may be the means of introducing these into the bodies of others; or the expectorator of the infective material may, in this way, infect his own and other's food, and re-infect himself. It is not only a piece of enlightened self-interest on the part of a consumptive to take care that all expectorated matter is disinfected rigidly, or, what is better, burnt promptly, but it is also his imperative duty to minimise the risk to his fellows by so doing. It is *what a consumptive coughs up* that is to be feared: not his mere breath—one may sit, for example, in the same room with him, if it be well ventilated, and his habits are cleanly, without practical risk. Spitting about in public-places and vehicles becomes, when the spitter is a consumptive, in addition to being a disgusting habit, a dangerous one as well; a habit that should be discouraged rigorously, alike in the interests of decent manners and of the general health. A consumptive can always carry a damp rag with him, which rag he can burn easily.

Unfortunately, a very large number of people inherit a predisposition, that is a heightened liability to fall victim to tuberculous disease, and many others favour the development of the disease in

themselves, through lowering their general tone by living amid surroundings of a depressing character, such as *ill-lighted, dusty, and badly-ventilated* shops, work-rooms, houses, and offices. A person enjoying fairly good health may, and probably does, take in tubercle bacilli from time to time with his food and air; but commonly the resisting power of his tissues is able successfully to cope with the invaders; the person, however, whose health is below par, and whose tissue-resistance is enfeebled, such an one all too frequently succumbs—and the onset is so insidious that the bacilli may gain a firm hold before the mischief is noted. The great general preventatives of consumption are *good food, sunlight, and fresh unbreathed air*. There are grounds for believing that pulmonary tuberculosis is due more often than is supposed to transference of infection from the alimentary tract. When a member of a household have fallen a victim to one or the other of the tuberculous diseases, it is not necessary to treat him as a social leper. If precautions be taken to prevent *anything he coughs up* from ever drying, and if the rooms occupied be ventilated effectively, he may share the ordinary family life. He should, however, sleep in a bed by himself, and, where practicable, *in a separate room*; this room should be as large as possible, and the consumptive should early acquire the habit of *keeping the windows always OPEN*, supposing, as is commonly the case, there is no other means of admitting fresh air. Of course, the proper way of securing adequate ventilation is to make arrangement *altogether unconnected with the window*; perhaps the simplest, and certainly one of the best means of doing this, is to insert a grating at *the floor level* in the external wall, delivering, if possible, *fresh air under the bed* (by means of a simple valve the incoming air can be directed upwards to the bottom of the bed); the atmosphere of the room will then always keep refreshing and healthsome, whether the window be closed or not. If such fresh air grating be *not* provided (the expense of inserting one is trifling), then if the window-frame reach low down, say to within 18 ins. of the floor, let it be kept open *at the bottom*; if the lower edge of the window be, as it most stupidly usually is, about 3 or 4 ft. from the floor, place an accurately fitting piece of board

under the lower sash, so as to leave a vertical aperture between the sashes of not less than 3 ins. in depth. Failing all these, open the window *at the top*. In towns the air may be rendered more acceptable to the irritated lung tissues by causing it to pass through a screen of stretched flannel, which will filter out effectually from the air particles of dust, "blacks," &c. *Under no circumstances is it prudent to turn the room into a practically closed box.* Let the bed clothing be warm and light, *e.g.*, *ventilated* eiderdown quilts. With good air, cold never need be feared. I do not believe that moisture is detrimental to a consumptive, but I believe that the lowered barometric pressure which usually accompanies it is, by leading to the engorgement and relative congestion of the superficial vessels. The important point is to keep a consumptive irrigated constantly *with unbreathed air*. It is when the bacillus-riddled victim of tuberculous disease becomes too weak to attend to himself carefully that the great risk of infecting his bedding, &c., and room occurs, and hence the sensibleness of having these carefully disinfected, after pale death have entered with equal foot, whether it be into the hovels of the lowly or the halls of the great.

Tuberculous disease may be conveyed to the human by other animals, notably, by cattle. Dairy cows, in particular, if kept in over-crowded and badly-ventilated sheds, fall ready victims to tuberculous disease, and, *through their milk*, may convey it to milk-feeding people, *particularly children*. This danger, in a great measure, may be guarded against by, *in all cases, boiling or otherwise thoroughly cooking suspected milk* before consuming it. There is a lessened but still sensible risk in eating the flesh of tuberculous cattle, for the risk cannot be entirely banished by cooking, the interior portion of joints, etc., rarely reaching a temperature sufficiently high to kill the bacilli.

It should be the duty of specially-appointed veterinary surgeons *to make periodical inspections of all dairy cattle*—to order their destruction when desirable (fair compensation to be

given in all cases where the owner has taken reasonable care to give no encouragement to the disease), and to supervize the disinfecting of the stalls, sheds, etc., which have been occupied by the affected animals. But one fears that these simple precautions will be adopted only when the electors of this Realm of England have realised "that public health *is* public wealth," and make the promotion of national healthiness "the supreme law."

REPORT

OF THE

CHIEF SANITARY INSPECTOR.

HEALTH DEPARTMENT,

MUNICIPAL BUILDINGS,

Norwich, 1911.

TO THE MEDICAL OFFICER OF HEALTH.

DEAR SIR,

The following is a synopsis of the principal work carried out during the year ending December 31st, 1910.

In order that comparisons and references may be easily made, I have so far as possible followed up the form of report adopted during the past years.

- 5,455 Nuisances detected.
- 1,037 Notices served by order of the Health Committee.
- 1,252 Preliminary Notices served.
- 19,498 Premises Re-inspected.
- 1,870 Nuisances have been abated.
- 368 Special complaints have been received and the premises inspected.

1,344 Letters sent in order to obtain the abatement of nuisances, &c.

160 References to the City Engineer.

177 References to the Water Works Company.

The following are the principal matters that have been dealt with :—

969	Orders served to provide efficient closets.
731	„ „ repair defectively paved yards.
329	„ „ repair or disconnect rain water pipes.
400	„ „ cleanse and unstop yard drains.
476	„ „ provide efficient privy pans and dust receptacles.
373	„ „ efficiently trap yard drains with gullies.
181	„ „ repair defective water closets.
74	„ „ cleanse dirty houses.
57	„ „ remove and cease to keep animals.
155	„ „ repair defective house roofs, floors, &c.
42	„ „ remove foul accumulations.
47	„ „ abate overcrowding.
72	„ „ repair defective eaves gutters.
44	„ „ repair or disconnect sink waste pipes.
70	„ „ empty and cleanse foul cesspools.
9	„ „ provide premises with a proper supply of water.

PRIVY CONVERSIONS.

Private owners continue to convert privies into water closets without notice from the Corporation. During the past year 234 privies have been so converted.

INFECTIOUS DISEASES.

1,279 visits have been paid to infected premises.

1,312 rooms have been disinfected upon the removal or recovery of the patient.

Liquid and powder carbolic disinfectants have, as in former years, been given to the householders gratuitously in all cases of infectious disease, and for disinfecting purposes generally.

HOUSE TO HOUSE INSPECTION.

279 houses and premises have been visited.

YARD AND COURT INSPECTION.

6,423 visits have been paid to Yards and Courts.

The privies and yards found dirty were cleansed at the request of the Inspectors. Other sanitary defects found are dealt with under the term "Nuisances," in a preceding column.

SLAUGHTER-HOUSES.

Number of Registered and Licensed Slaughter-Houses, 40.
2,775 visits have been paid to slaughter-houses.

It was found necessary to caution several occupiers of slaughter-houses respecting the dirty condition of the walls and floors, and the non-removal of refuse in accordance with the Slaughter-House Bye-Laws.

MARKETS.

The Fishmarket has been visited and inspected daily, and the Vegetable, Fruit, and Provision Markets on Market Days.

The Inspectors on duty every Saturday evening for the purpose of inspecting the meat, poultry, fish, &c., exposed for sale in the Provision Market, and for examining articles of food exposed for sale in the poorer parts of the City, have on several occasions found it necessary to deal with various articles of food which were in a condition unfit for the food of man, and such articles have been included in the undermentioned list of unsound food.

UN SOUND FOOD.

The following have been destroyed as being unfit for human food, with the consent of the owners:—

- 8 Carcases of Mutton.
- 5 ,, Beef.
- 2 ,, Pork.
- 11 Sides of Beef.
- 2 Forequarters of Beef.
- 1 Rump and Loin of Beef.
- 1 Clod and Sticking of Beef.
- 3 Bodies of Veal.
- 58 Ox Livers.
- 35 Sets of Ox Lungs.
- 1 Ox Tongue.
- 2 Sets of Skirts.
- 1 Ox Heart.
- 12 Ox Kidneys.
- 7 Ox Spleens.
- 2 Sheep's Plucks.
- 1 Sheep's Liver.
- 12 Pig's Plucks.
- 1 Pig's Spleen.
- 1 Set of Pig's Lungs.
- 10 Crown Fats.
- 2 Fry Fats.
- 49 Bags of Shrimps.
- 31 Pecks ,,
- 1 Kit ,,
- 1 Box ,,
- 2 Peds ,,
- 8 Baskets ,,
- 29 Boxes of Kippers.
- 28 ,, Dried Haddocks.
- 15 ,, Smelts.
- 2 ,, Codlings.
- 1 Box of Plaice.

- 11 Boxes of Smoked Fillet Fish.
- 14 „ Bloaters.
- 1 Box of Cod and Coal Fish.
- 2 Boxes of Mackerel.
- 1 Kit of 9 Codfish.
- 2 Bags of Prawns.
- 3 „ Winkles.
- 10 „ Cockles.
- 6 Tins of Salmon.
- 1 Tray of Tomatoes.
- 1 Bucket of Hotel Dripping (2 stone).
- 25 Tins of Ice Wafers, Cups, Cornets, etc. (20,000).

PROCEEDINGS UNDER THE SALE OF FOOD AND DRUGS ACTS.

During the year 214 samples of food and drugs have been submitted for analysis.

Description of Samples.	Number of Samples.	Result of Analysis.	
		Genuine.	Adulterated.
Milk	113	89	24
Butter	33	33	—
Margarine	7	7	—
Coffee	5	3	2
Pork Lard	12	12	—
Bread	9	9	—
Ice Cream	9	8	1
Whole Rice	5	2	3
Golden Syrup	4	4	—
Raspberry Jam	4	4	—
Mincemeat	3	3	—
Bread and Butter	2	2	—
Brandy	2	—	2
Cocoa	1	—	1
Camphorated Oil	1	—	1
Black Currant Wine	1	1	—
Raisin Wine	1	—	1
Ginger Wine	1	1	—
Orange Wine	1	—	1
	214	178	36

Number of samples of Milk taken on Sundays, 20.

In 21 Cases proceedings were taken against vendors of adulterated articles :—

15 in cases of adulterated Milk.

2	„	„	„	Brandy.
1	„	„	„	Coffee.
1	„	„	„	Cocoa.
1	„	„	„	Raisin Wine.
1	„	„	„	Orange Wine.

In 20 of the above cases the magistrates convicted and imposed fines varying from 1/- to £5, and 8/- costs.

1 case of Adulterated Cocoa was dismissed.

In 5 cases of Milk, 1 of Coffee, 1 of Camphorated Oil, 1 of Ice Cream, and 3 of Whole Rice the vendors were written to and cautioned.

2 cases of Adulterated Milk were left for the Town Clerk to deal with, and in 1 case the vender of Milk gave a satisfactory explanation to the Health Committee.

In 1 case of Milk the time limit expired before information was laid.]

Particulars of the prosecutions are given below :—

No.	Date.	Adulteration.	Article.	Fine.
	1910.			
233	Feb. 23rd	16 per cent. added water	Brandy	1/-.
234	"	22·9 " " "	"	£1 and 7/- costs.
236	"	10 " fat deficient	Milk	£1 and 7/- costs.
244	Mar. 21st	90 " chicory	Coffee	10/- and 8/- costs.
246	"	41½ " added cane sugar and 19½ per cent. added starch	Cocoa	Dismissed.
274	"	11 per cent. fat deficient and 3 per cent. added water	Milk	10/- and 8/- costs.
278	April 7th	6 per cent. added water and artificially coloured	"	10/-.
289	" 13th	10 per cent. fat deficient	"	£1 and 8/- costs.
294	" 27th	20½ " added water	"	£1 and 7/- costs.
301	May 23rd	25 " fat deficient	"	£1 and 7/- costs.
302	"	7 " fat deficient & 2½ " added water	"	£1 and 7/- costs.
319	June 28th	12¾ " " "	"	£2 and 6/- costs.
320	July 13th	Added formaldehyde not less than ·008 per cent.	"	£2 and 8/- costs.
322	June 28th	17 per cent. added water	"	£2 and 8/- costs.
323	"	18 " fat deficient & 15 " added water	"	£1 and 8/- costs.
334	Aug. 10th	14 " fat deficient	"	£2 and 7/- costs.
371	Oct. 25th	7·35 grains of Boracic Acid per pint	"	£5 and 8/- costs.
405	Dec. 13th	8 per cent. fat deficient	"	10/- and 7/- costs.
	1911.			
415	Jan. 27th	19 " added water	"	£2 and 8/- costs.
420	"	5·52 grains Salicylic Acid added per pint	Raisin Wine	£1 and 18/6 costs.
445	Feb. 2nd	4·375 grains Salicylic Acid added per pint	Orange Wine	£1 and 19/6 costs.

The following prosecutions were also taken, viz. :—

Date.	Particulars.	Fine.
1910. August 3rd	For non-removal of refuse from slaughter-house	40/- and 19/- costs.
October 11th	For obstructing one of the Assistant Inspectors	£5 and 7/- costs.
.. ..	Milkseller for not having his name and address inscribed on can	5/-.
.. ..	.. ..	Withdrawn.

WATER ANALYSIS.

2 Samples of Water have been taken from pumps and draw-wells, which were certified “passable.”

COWSHEDS, DAIRIES, AND MILKSHOPS.

Cowsheds—

Number on Register, 57.

Number of Cows, 552.

Dairies—

Number on Register, 26.

Milkshops—

Number on Register, 202.

Number of applications for registration, 34.

Number milkshops closed, 13.

While many milkshops are kept scrupulously clean, there are a number where the milk is kept in close proximity to other articles which are liable to contaminate the milk.

It is much to be hoped that the granting of licences to unsuitable persons will shortly be forbidden by Regulations.

COMMON LODGING-HOUSES.

The Common Lodging-houses have been visited weekly and were found to be conducted in a fairly satisfactory manner.

HOUSES LET IN LODGINGS.

310 visits have been paid to houses let in lodgings, and many rooms were limewashed at the request of the Inspectors.

CARAVANS.

24 Inspections of Caravans have been made.

MEETINGS OF OWNERS.

443 Meetings of owners have been held.

OFFENSIVE TRADES.

155 Inspections have been made of premises where offensive trades are carried on.

SMOKE OBSERVATIONS.

29 Smoke Observations have been taken.

It has been necessary to caution several manufacturers and firemen, and recommend the use of a better class of coal and the exercise of greater care in firing.

SHOP ASSISTANTS ACT.

33 Inspections have been made to see that the requirements of above Act were carried out.

PIGGERIES.

95 Visits have been paid to Piggeries, many of which have been cleansed at the request of the Inspectors.

BAKEHOUSE INSPECTIONS.

Number of Bakehouses on Register, 149.

Visits paid to Bakehouses, 325.

MARGARINE ACT.

405 Inspections have been made of premises to see if Margarine was sold, and where such was the case, to see that the requirements of the Margarine Act were carried out.

FACTORIES AND WORKSHOPS.

Total number of Workshops in the City	...	682
Number of New Workshops inspected	...	104
Total number of Factories in the City	...	332
Number of Outworkers' Premises visited by		
Male Inspectors	... ..	747

The undermentioned are the insanitary conditions that have been dealt with at the above class of premises:—

331 Workshops and Workrooms have been cleansed and limewashed.

26 Water Closets have been provided.

3 Urinals have been fitted.

5 Cases of overcrowding have been dealt with.

4 Workshops, floors, roofs, &c., have been repaired.

3 Defective water closets have been repaired.

In 3 cases the W.C. accommodation was efficiently screened from the workroom.

11 Cases of insufficient drainage have been dealt with.

1 Case of insufficient ventilation has been dealt with.

2 Ventilator hoods have been fixed to gas stoves.

SCAVENGING.

During the year 8,043 loads of Privy Bin Refuse were removed by the Night Waggon, and 23,083 loads of House Refuse by the Dust Waggon in the daytime.

252 Loads of Refuse were destroyed at the New Mills Dépôt.

12,763 loads of Refuse were removed by Wherry at the Fishergate Dépôt.

MEMORANDUM.

There are 2,580 Privy Pans and 1,136 Privy Bins in the City, while 24,363 houses are provided with water closet accommodation.

I am, dear Sir,

Yours obediently,

JOSEPH BROOKS,

Chief Sanitary Inspector.

